Duke Energy Carolinas, LLC – Executive Summary

A. Description

During the first quarter 2018 Duke Energy Carolinas Collaborative meeting, Duke Energy Carolinas, LLC (the "Company") will provide an update on the performance of its energy efficiency and demand side management programs/pilots for the time frame of January 2017 through December 2017. The Company's product managers prepared reports on each program/pilot describing the offerings and detailing each program's performance. This Executive Summary describes how the Company performed in regards to the energy efficiency and demand side management program/pilot performance at an aggregate level during the full year of Vintage 2017 in comparison to as filed information. Program-specific details are provided in the individual reports.

Program reports include:

Program	Category	Customer
Appliance Recycling Program **(Closed)**	EE	Residential
Energy Assessments	EE	Residential
Energy Efficient Appliances and Devices	EE	Residential
Energy Efficiency Education Programs	EE	Residential
Residential – Smart $aver Energy Efficiency Program (HVAC EE)	EE	Residential
Income Qualified Energy Efficiency and Weatherization Assistance	EE	Residential
My Home Energy Report	EE	Residential
Multi-Family Energy Efficiency	EE	Residential
Business Energy Reports **(Closed)**	EE	Non-residential
Non-Residential Smart $aver Prescriptive	EE	Non-residential
Non-Residential Smart $aver Custom	EE	Non-residential
Non-Residential Smart $aver Custom Assessment	EE	Non-residential
Non-Residential Smart $aver Performance Incentive	EE	Non-residential
Small Business Energy Saver	EE	Non-residential
Smart Energy in Healthcare **(Closed)**	EE	Non-residential
Smart Energy in Offices **(Scheduled for closure 06/30/2018)**	EE	Non-residential
EnergyWise for Business	EE/DSM	Non-residential
Power Manager	DSM	Residential
PowerShare	DSM	Non-residential

Audience
All retail Duke Energy Carolinas customers who have not opted out.

B &C. Impacts, Participants and Expenses
The tables below include actual results for the full year of Vintage 2017 in comparison to as filed data for Vintage 2017.

The Company includes the number of units achieved and a percentage comparison to the as filed values. The unit of measure varies by measure as a participant, for example, may be a single LED bulb, a kW, a kWh, a household or a square foot. Due to the multiple measures in a given program or programs, units may appear skewed and are not easily comparable.

Duke Energy Carolinas, LLC – Executive Summary

Carolinas System Summary[1]

$ in millions, rounded	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$360.8	$586.3	162%
Program Cost	$130.6	$192.5	147%
MW[2]	1,002.0	1,022.2	102%
MWH	608,069.9	906,961.4	149%
Units	118,555,154	121,536,772	103%

1) Numbers rounded.

2) As filed MW are annual maximum peak. Coincident peak is tracked for impacts.

Carolinas Energy Efficiency Summary[1]

$ in millions, rounded	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$253.4	$481.2	190%
Program Cost	$99.1	$162.7	164%
MW[2]	118.7	175.3	148%
MWH	606,312.6	904,017.5	149%
Units	117,728,662	120,736,014	103%

1) Numbers rounded.

2) As filed MW are annual maximum peak. Coincident peak is tracked for impacts.

Carolinas Demand Response Summary[1]

$ in millions, rounded	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$107.4	$105.1	98%
Program Cost	$31.5	$29.8	95%
MW[2]	883.3	846.9	96%
MWH	1,757.4	2,943.9	168%
Units[3]	826,492	800,758	97%

1) Numbers rounded.

2) MW capability derived by taking the average over the PowerShare and Power Manager contract periods.

3) Units included in filing represented kW at meter, rather than number of participants. YTD value reflects average participation for 2017.

D. Qualitative Analysis

Energy efficiency impacts have primarily been driven by lighting measures for both residential and non-residential customers. This is a result of a higher take-rate for lighting offerings than originally projected.

Highlights

Energy Efficiency

Customer participation continues to be largely driven by lighting and assessments programs. These measures provide customers with a relatively low cost efficiency upgrade, with minimal effort, creating a positive initial energy efficiency experience.

Demand Side Management (DSM)

The DSM portfolio is comprised of PowerShare (non-residential), Power Manager (residential), and EnergyWise for Business (non-residential) programs. The impacts and participation were very close to the 2017 As-Filed targets.

Issues

A few of the Company's programs struggled to garner participation and/or remain cost-effective and were therefore closed or are scheduled for early closure. The Company faces a significant challenge with reductions in avoided costs, making programs and their measures become less impactful. As a result of this and other factors, the Company's continued assessment of its portfolio may result in the removal of measures and possible elimination of programs in order to address cost-effectiveness.

Potential Changes

Several programs are reviewing their current processes and are considering potential changes to increase customer adoption. Potential changes are discussed in individual program reports.

E. Marketing Strategy

Located in individual reports.

F. Evaluation, Measurement and Verification

Located in individual program reports.

Program Update:
Effective December 31, 2017 this program was closed.

A. Description

The Appliance Recycling Program ("Program") promotes the removal and responsible disposal of operating refrigerators and freezers from Duke Energy Carolinas, LLC's (the "Company's") residential customers. The refrigerator or freezer must have a capacity of at least 10 cubic feet but not more than 30 cubic feet. The Program recycles approximately 95% of the material from the harvested appliances.

Audience

Eligible Program participants include the Company's residential customers who own operating refrigerators and freezers used in individually metered residences.

B &C. Impacts, Participants and Expenses

Appliance Recycling[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$0.0	$0.0	-
Program Cost	$0.0	$0.0	-
MW	0.0	0.0	-
MWH	0.0	0.0	-
Units	0	0	-

1) Values are reflected at the system level.
2) Numbers rounded.

D. Qualitative Analysis

This program is no longer being offered to customers.

Potential Changes
No Changes at this time.

E. Marketing Strategy

No Marketing efforts were performed.

F. Evaluation, Measurement and Verification

No evaluation activities were conducted in 2017.

Energy Efficient Appliances and Devices

A. Description

The Energy Efficient Appliances and Devices program ("Program") offers a variety of measures that allow eligible Duke Energy Carolinas, LLC (the "Company") customers to take action and reduce energy consumption. The Program includes offers for lighting measures, pool pumps, heat pumps water heaters and water measures.

Free LED Program

The Free LED (Light Emitting Diode) program launched in January 2016, replacing the Free CFL program. It is designed to increase the energy efficiency of residential customers by offering customers 9 watt A19 LEDs to install in high-use fixtures within their homes.

The LEDs are offered through multiple channels to eligible customers. The on-demand ordering platform enables eligible customers to request LEDs and have them shipped directly to their homes.

The program consists of two types of eligible customers:

1. Customers who have not yet met or exceeded the Duke Energy bulb (CFL or LED) limit of 15. These customers have the option to choose kits in quantities of 3, 6, 8, 12, and 15 bulbs. Available order quantities presented are dependent on past campaign participation (i.e., coupons, Business Reply Cards ("BRCs") and other Company programs offering lighting).

2. Customers who met or exceeded the 15 bulb limit (CFL or LED) and 5 years has passed since their shipment date. Depending upon past order quantities, these customers could have the option to order 12 bulbs or a lesser quantity of 6.

Customers have the flexibility to order and track their shipment through three separate channels:

1) Telephone: Customers may call a toll-free number to access the Interactive Voice Response ("IVR") system, which provides prompts to facilitate the ordering process. The IVR is designed to handle request for both English and Spanish-speaking customers. Customers may easily validate their account, determine their eligibility and order their LEDs over the phone.

2) The Company's Web Site: Customers can go online to order LEDs. Eligibility requirements and frequently asked questions are also available.

3) Online Services ("OLS"): Customers enrolled in the Company's Online Services may order LEDs through the Company's web site, if they are eligible.

Specialty Lighting

The Duke Energy Savings Store ("Store") is an extension of the on-demand ordering platform enabling eligible customers to purchase specialty bulbs and have them shipped directly to their homes. The Store launched on April 26, 2013 and offers a variety Light Emitting Diodes lamps ("LEDs") including; Reflectors, Globes, Candelabra, 3-Way, Dimmable and A-Line type bulbs. The incentive levels vary by bulb type and the customer pays the difference. Various shipping promotions are run throughout the year, ranging from free to a reduced flat rate price.

The maximum number of incented bulbs eligible by the Company is 36 per account. However, customers may choose to order additional bulbs but will not receive the Company offered incentive.

Customers can check eligibility and shop for specialty bulbs through four separate channels:

1) The Company Web Site: Customers can access the store via the program's webpage on DukeEnergy.com . By clicking the 'shop now' button customers are then taken to the store where they can purchase specialty bulbs. Frequently asked questions are available to help customers learn more about the program and how sustainable they can be by purchasing and using LED lighting.
2) Online Services: Customers enrolled in the Company's Online Services may visit the Store and purchase specialty bulbs. Upon login, eligible customers are intercepted with the Store offer. Customers can select "Shop Now" or "No Thanks". Additional links and promos within OLS are also available for customers to access the Store.
3) Phone Ordering: Customers are provided with the opportunity to order by phone. A toll free phone number is now provided on all promotional pieces for the program and customers can place their orders over the phone directly with the programs third party vendor.
4) On occasion, Duke Energy provides customers with a mail-in option for placing an order. Customers who receive a direct mail campaign that offer specially priced bulb bundles the option to order these bundles online, by phone or with a postage paid return mailer included in the piece.

The Store is managed by a third party vendor, Energy Federation Inc. ("EFI"). EFI is responsible for maintaining the Store website, fulfilling all customer purchases, program call center support and product recommends. The Store's landing page provides information about the store, lighting products, account information, and order history. Support features include a toll free number, package tracking, and frequently asked questions.

An educational tool is available to help customers with their purchase decisions. The interactive tool provides information on bulb types, application types, savings calculator, lighting benefits, understanding watts versus lumens (includes a video) and recycling/safety tips. Each wireframe within the educational tool provides insight on the types of bulbs customers can purchase and/or provides answers to questions they have about the products or savings.

Product pages for each bulb category include application photos, product images, product specifications, purchase limits, and program pricing. Customers may place items in their shopping carts to purchase at a later time. Customers can pay for their purchase with a credit card or by check.

Benefits of the four distinct channels for the Savings Store include:

- Improved customer experience
- Advanced inventory management
- Simplified program coordination
- Enhanced reporting
- Increased program participation
- Reduced program costs
- Quick and convenient
- Discounted pricing

Retail Lighting

Energy Efficient Appliances and Devices

The Retail Lighting Program launched in March of 2016 with the goal of reducing electric energy consumption and peak demand through increased awareness and adoption of energy-efficient lighting technologies. The program partners with retailers and manufacturers across North and South Carolina to provide price markdowns on customer purchases of efficient lighting. Product mix includes Energy Star rated standard, reflector, and specialty LEDs, and fixtures. Participating retailers include a variety of channel types, including Big Box, DIY, Club, and Discount stores.

The program promotes customer awareness and purchase of program-discounted products through a range of marketing and outreach strategies, including in-store collateral and events, bill inserts, direct mail and email marketing, mass media advertising, online advertising, and community events. The program also provides training to store staff to enable better customer education at the point of purchase. Customer education is imperative to ensure customers are purchasing the right bulb for the application in order to obtain high satisfaction with lighting products and subsequent purchases.

Water Measures

The Save Energy and Water Kit Program ("SEWK") launched in 2014. The Program is designed to increase the energy efficiency of residential customers by offering customers energy efficient water fixtures and insulating pipe tape for use within their homes.

The SEWK program is offered through a selective eligibility process, enabling eligible customers to request a kit and have it shipped directly to their homes. Customers owning and living in a single-family home with an electric water heater who have not received similar measures through another Company-offered energy efficiency program are eligible for the program. Kits are available in two sizes for homes with one or more full bathrooms and contain varying quantities of shower heads, bathroom aerators, kitchen aerator and insulating pipe tape. Program participants are eligible for one kit shipped free of charge to their home.

Customers are pre-screened based on the eligibility requirements and mailed a business reply card (BRC). Customers may choose to return the BRC or call a toll-free number to take advantage of the offer. Upon receiving the BRC from the customer or receiving a telephone redemption, Energy Federation Inc (EFI), the program vendor, will ship the eligible kit to the customer. Due to the unique eligibility requirements of this program, BRCs have been the only channel employed to offer the kits to customers. The Company will add direct email offers in 1Q2018. Customers receiving the direct email offer will be subject to the same eligibility requirements.

High Efficiency Pool Pumps

The High Efficiency Pool Pumps measure ("Pool Energy Efficiency Program") is designed to encourage the purchase and installation of energy efficient variable speed pool pumps for residential in-ground swimming pools. Eligible customers receive an incentive of $300 for the replacement of an eligible single-speed pool pump with a new Energy Star certified variable speed pump. New swimming pool construction is also eligible for the rebate. The program is marketed through a network of participating contractors ("Trade Allies") that interface directly with the customer, as well as through various marketing channels such as direct mail, email, company website, bill inserts and other customer communications. Eligible customers include single-family, owner-occupied residential customers with an in-ground pool in the Duke Energy Carolinas service territory. Builders of single-family residences are eligible for new residence construction that includes an in-ground swimming pool. In late 2017 this measure was moved to the Residential Smart $aver® Energy Efficiency Program (previously known as HVAC EE).

High Efficiency Heat Pump Water Heater

Energy Efficient Appliances and Devices

The High Efficiency Heat Pump Water Heater measure is designed to encourage the installation and adoption of heat pump water heaters. Eligible customers receive an incentive of $350 for the replacement of an existing electric water heater with an Energy Star certified heat pump water heater having an Energy Factor ("EF") rating of 2.0 or higher. The program is marketed through a network of participating contractors ("Trade Allies") that interface directly with the customer, as well as through various marketing channels such as direct mail, email, company website, bill inserts and other customer communications. Eligible customers include single-family, owner-occupied residential customers with electric water heating in the Duke Energy Carolinas service territory. Builders of single-family residences that include an eligible heat pump water heater are also eligible for the rebate. In late 2017 this measure was moved to the Residential Smart $aver® Energy Efficiency Program (previously known as HVAC EE).

Audience
Customers who meet the Program eligibility requirements.

B &C. Impacts, Participants and Expenses

Energy Efficient Appliances and Devices[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$46.6	$106.3	228%
Program Cost	$16.7	$30.3	182%
MW	8.1	23.9	293%
MWH	63,591.5	141,300.1	222%
Units	2,544,764	6,734,133	265%

1) Values are reflected at the system level.
2) Numbers rounded.

D. Qualitative Analysis

Free LED Program

Highlights
Beginning March 18th 2017, the Free LED offer was made available to eligible customers who met or exceeded the 15 bulb limit (CFL or LED) and 5 years has passed since their shipment date. At the time of launch, over 500,000 additional customers immediately became eligible to participate with the ability to order up to 12 bulbs depending on the date and quantity of past orders. As each day goes by, more customers will become eligible based on meeting the 5 year anniversary of their previous order date if that order consisted of at least 6 free bulbs. In 2017, this newly eligible customer segment accounted for 143,482 orders equating to 1,635,582 bulbs. Overall, , the program has experienced 293,494 orders resulting in 3,673,184 bulbs.

From an order channel perspective, 66% of the orders were placed through OLS (Online Services). The IVR accounted for 7% of orders and public website had 27%.

Issues
Analyzing customer data and finding ways to effectively market to non-participating customers.

Potential Changes
There are no anticipated changes at this time for the program. .

Specialty Lighting

Highlights

Energy Efficient Appliances and Devices

The Online Savings Store provides an ecommerce platform that allows customers to purchase LEDs on demand, at any time. Over 34,600 orders were placed January 1 through December 31 2017 resulting in over 414,000 bulbs being delivered. Over 84 percent of customers accessed the Online Savings Store via the public website, while 16 percent accessed the Online Savings Store by logging into their on-line services account.

Issues
Educating and bringing awareness of the Store to eligible customers, while providing expanded product offerings that meet customers energy efficient needs from a holistic perspective.

Potential Changes
Introduction of more LED's and non-lighting products to provide variety to the product mix are potential changes for 2018. Additionally, refreshing the stores appearance to be more inviting and easier to navigate –overall improving the shopping experience, are being planned for 2018.

Retail Lighting

Highlights
In 2017, the program moved a total of 2,107,057 measures, including 1,705,231 LEDs and 401,826 Fixtures.

The DEC Energy Efficiency Program had 8 lighting retail channels actively participating in 2017. While the top three retail channels account for 71% of the program sales, all retail channels are considered important in that they allow access to the program for a widely diverse and geographically spread population of DEC customers. This assures that the Program reaches 90% of customers within 30 miles of a participating retail location.

The Program is operating efficiently with 64% of overall Program costs going directly to customers in the form of incentives. 99% of the remaining Program costs are spent on implementation and administration of the Program, including incentives and management fees. Only 1% of these costs are spent on marketing, labor and other costs.

Issues
No issues at this time.

Potential Changes
No changes at this time.

Save Energy and Water Kit Program

Highlights
The Save Energy and Water Kit ("Program") was launched in April 2014. In 2017, 427,850 business reply cards (BRCs) were mailed resulting in the distribution of over 629,000 measures.

Issues
The Company continues to analyze data from non-respondents of the BRC offer to identify opportunities to increase the adoption rate. The Company also continues to review customer satisfaction surveys to

identify opportunities to improve in service rates and overall customer satisfaction. Currently, customers lack the ability to customize the measures offered in the kit to receive different form factors, upgraded items or additional quantities. [Ldg1]EM&V data shows a higher percentage of gas water heater customers participated in the program than expected.

Potential Changes

In 4Q 2017, the electric water heater propensity model was updated to reduce participation by customers with gas water heaters. In 2018, the program will expand an online ordering option that will allow customers to redeem the offer online. As a part of this launch, the Company will begin using direct email to reach market segments that are more prone to interact and do business online. The program will add other energy efficient water saving products to the online ordering platform that will allow customers to upgrade the products offered through the program and pay the difference during check out.

High Efficiency Pool Pumps

Highlights

The Company partnered with several wholesale distributers across North Carolina and South Carolina to serve as distribution channels for program awareness and developing the Trade Ally Network. Trade Allies are important to the program's success and continue to be targeted through these channels because they interface with the customer during the decision-making process. Several training classes were conducted throughout the jurisdiction to continue educating the trade allies on the advanced technology variable speed offers for reducing energy consumption as well as how to sell the technology to the end user.

Issues

Customer buy-in and participation of the Trade Ally network is vital to the success of the program. Educating contractors on new emerging technologies and the value the technologies provide customers is critical in growing the trade ally network and their willingness to adopt the program. Additionally many distributers are requesting POS rebates as they do not want to deal with submitting rebates or handling the additional paper work requirements for the Program. The Company is currently working to determine if a technology build can be put in place to accommodate distributor needs and boost participation.

High Efficiency Heat Pump Water Heater

Highlights

The Company has partnered with manufactures and national retailer such as General Electric and Lowes to increased program awareness and maximized in store purchases. The program continued recruiting plumbing contractors and currently registered HVAC companies to increase coverage across the jurisdictions and maximize participation. Training classes were conducted throughout the jurisdiction to continue educating the trade allies on the advanced technology offers for reducing energy consumption as well as how to sell the technology to the end user vs. traditional electric hot water heaters.

Issues

Educating and bringing awareness of the program to both customers and potential contractors has been challenging. Educating contractors has been addressed through additional Trade Ally marketing, recruitment and training but remained slow do to the re-emerging technology of heat pump water heaters and willingness to adopt more technical services. Customer awareness is being addressed through program design and marketing tactics but will be primarily targeted as a joint effort with manufactures and national retailers. Their willingness to continue co-branding and the frequency of those campaigns will be

critical in reaching our customer base. In addition, GE announced in Q4 2016 that they would stop production of the GEO-Spring HPWH by the end of 2016 which carried a significant percentage of the market share. The Program is now working with AO Smith to continue maximizing in-store retail purchases.

- **Marketing Strategy**

Free LED Program
The overall strategy of the program is to reach residential customers who have not adopted LED lighting. The Company will continue to educate customers on the benefits of LEDs while addressing barriers for customers who have not participated in the program. Additionally, the ease of Program participation will also be highlighted to encourage use of the on-demand ordering platform. The Free LED and Specialty Lighting offers utilize the same ordering platform which allows the Company to promote both lighting offers efficiently and bring awareness to non-adopters.

From an outreach standpoint, the program does rely on our OLS (Online Services) Intercept to generate interest in the program. This is a pop up that launches as a customer logs into OLS to pay their bill or view account information. At that time, a customer can click “continue” to take them to the Free LED ordering page. In 2017, approximately 58% of orders came as a result of this intercept.

In addition to the intercept, the program also solicited customers via emails and direct mail pieces. From an email perspective, over the course of 6 separate campaigns, the program targeted over 177,000 customers resulting in a take rate of about 16%. In regards to direct mail, approximately 134,000 customers were targeted over the course of 3 separate campaigns. These also generated a response rate close to 16%.

A sample of program collateral and emails (which cross promote Specialty Lighting) are available in the Appendix.

Specialty Lighting
Since the launch of the Store, the marketing efforts include:

- bill messages,
- bill inserts,
- email campaigns
- And direct mail.

Examples of the marketing pieces can be found in the Appendix. Awareness and education will continue to be a focus in collateral messages to eligible customers, as well as highlighting great pricing and other promotional offering i.e.: free shipping.

Retail Lighting

The program’s marketing efforts for 2016 included:

- Point of Purchase materials at the participating retailer locations
- Duke Energy and Program website
- General Awareness Campaigns

- Bill Inserts
- Email
- Online Advertising
- Paid advertising/mass media
- Out of Home advertising

- Advertised events at key retailers including:
  - Direct mail
  - Email
  - Paid advertising/mass media (radio, newspaper, etc.)
  - Social media
  - In Store materials (fliers, bag stuffers, posters, banners, etc.)
- Community outreach events (home shows, sporting events, cultural events, etc.)

These marketing efforts are designed to create customer awareness of the Program, to educate customers on energy saving opportunities and to emphasize the convenience of Program participation. Additionally, marketing efforts related to advertised in-store events are designed to motivate customer participation.

Save Energy and Water Kit Program

The overall strategy of the program is to reach residential customers who have not adopted low flow water devices. The Company will continue to educate customers on the benefits of low flow water devices while addressing barriers for consumers who have not participated in the program.

Direct mail marketing in the form of BRCs is the current marketing channel being utilized by this program in the Carolinas. The Company will add direct email to select market segments throughout 2018..

High Efficiency Pool Pumps

The Company implemented several customer marketing campaigns in 2016 which leveraged channels such as email, paid search, display ads, direct mail and social media to build awareness of the program. Other channels such as co-branded retail displays with selected distributers were utilized to create awareness for the program. The programs' messaging was built around the benefits of the product including payback, annual savings and cleaner pools.

High Energy Efficiency Heat Pump Water Heater

The Company implemented several customer marketing campaigns in 2016 which leveraged channels such as bill inserts, paid search, and display ads to build awareness of the program. Other channels such as co-branded retail displays with selected manufactures and national retailers were utilized to create awareness for the program.

- **Evaluation, Measurement and Verification**

Residential Lighting/Heat Pump Water Heaters/Pool Pump/Save Energy & Water

Energy Efficient Appliances and Devices

The DEC Free LED evaluation work was completed at the end of 2017. Evaluation activities included a process and impact evaluation. The verified gross energy impact per bulb was 31.4 kWh with program realization rates of 112% for energy, 127% for summer peak and 171% for winter peak. Program net to gross for the program was 50%.

For the Retail Lighting evaluation, the combined DEC/DEP process and impact report is scheduled for completion in first quarter of 2018. Both evaluations will consist of engineering estimates of the measures provided in the kits or in retail channels. The DEC Specialty Lighting process and impact evaluation is currently underway and is scheduled for completion in the third quarter of 2018.

Evaluation work for the combined DEC/DEP Water Measures program began in the first quarter of 2017, with the final report delivered in the fourth quarter of 2017. Evaluation activities used a combination of participant surveys and engineering methods to quantify energy, summer, and winter demand impacts from the measures provided in the Water Measures kit. Participant surveys helped inform in-service rates, satisfaction with the kit measures, and help determine free ridership and spillover. Verified results include gross energy savings per kit of 279.6 kWh versus ex-ante impacts of 595.2 kWh, for an energy realization rate of 47%. Program free ridership was 17% and spillover was estimated at 10%, for a NTG of 93.%.

Lastly, evaluation activities for the heat pump water heaters and pool pump measures is included in the DEC Smart $aver HVAC program evaluation which is scheduled to be completed in the first quarter of 2018.

Energy Efficient Appliances and Devices

- **Appendix**

Free LED Program – Direct Mail New Customer Letter:

DUKE ENERGY.

<<Mr. Sample A. Sample>>
<<Mailing Address Line 1>>
<<Mailing Address Line 2>>
<<Anytown, USA 12345>>

Welcome to Duke Energy!

As your new energy provider, we're always looking for ways to help you save money and energy. Energy-efficient lighting is a great way to do both.

We'd like to start you on the right foot and, as a welcome, offer you a **FREE BOX OF LED BULBS**. You'll get general purpose ENERGY STAR® certified 9-watt bulbs for your home.

YOUR FREE LEDS:

- **Use up to 90% less energy** and **last 25 times longer** than incandescent bulbs
- Contain **no mercury**
- Have a potential **lifetime savings** of up to $206 per bulb

Order your **FREE BULBS** now.

Visit **duke-energy.com/FreeLEDBulbs** or call **800.943.7585.**

Here's your account number to make ordering even easier:
<<account number here>>

SHOP MORE. SAVE MORE.

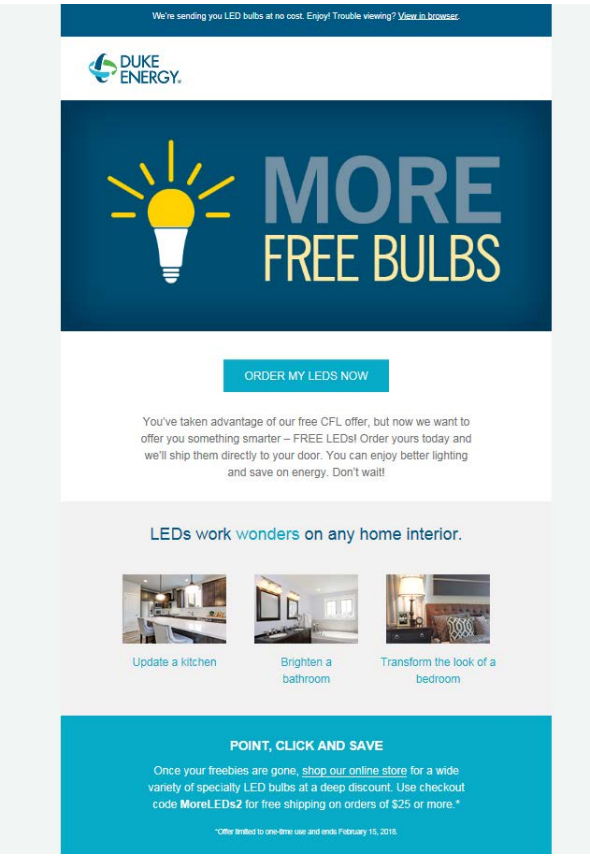
Once your freebies are gone, our online store offers a wide variety of name-brand, energy-saving bulbs at a discount. We offer specialty bulbs for every room in your house, and we'll have them shipped to your door.

Shop now at: duke-energy.com/OnlineStore

We offer free shipping on orders of $25 or more. Use code Duke103 at checkout. Free shipping offer ends 12/15/2016.

Free LED Program – Email Campaign:

Energy Efficient Appliances and Devices



Free LED Program – Direct Mail Campaign

Energy Efficient Appliances and Devices

Energy Efficient Appliances and Devices

Help the planet. Help your wallet.

Water and energy are precious resources. And now we've made it possible for you to save water every time you turn on the faucet or take a shower.

Our FREE state-of-the-art showerheads offer consistent water flow and help ensure a great shower experience. And the fixtures help you save on your bill and conserve water.

Make the switch with our Save Energy and Water Kit today.

Save Energy and Water Kits are available to qualifying Duke Energy Carolinas, Duke Energy Progress, Duke Energy Indiana, Duke Energy Kentucky and Duke Energy Ohio customers.

Inside your FREE kit:

State-of-the-art showerheads
Newest, top-of-the-line showerheads can help you save up to 2 gallons per minute while maintaining water pressure and your comfort.

Faucet aerators
Mixing air with water reduces the amount of water needed. The aerator also maintains constant and satisfactory water pressure.

Pipe insulation tape
Wrapping your water heater pipes is a simple way to manage water temperature in your home and saves you nearly 17 percent on your energy bill.

Installation guide and how-to video
Your kit includes a detailed, step-by-step instructional guide to help you complete the installation of your new fixtures.

To learn more about our program, visit duke-energy.com/SaveWater or call 866.807.1544.

☐ YES, send me my FREE Save Energy and Water Kit!

DUKE ENERGY.

Energy Efficient Appliances and Devices

You'll feel good knowing you've helped the planet too.

Water and energy are precious resources. And now we've made it possible for you to save water and still enjoy your shower experience.

Our **FREE state-of-the-art showerheads** offer consistent water flow and help ensure a great shower experience. And the fixtures help you save on your bill and conserve water.

Make the switch with our Save Energy and Water Kit today.

Save Energy and Water Kits are available to qualifying Duke Energy Carolinas, Duke Energy Progress, Duke Energy Indiana, Duke Energy Kentucky and Duke Energy Ohio customers.

Inside your FREE kit:

State-of-the-art showerheads
Newer, top-of-the-line showerheads can help you save up to 2 gallons per minute.

Faucet aerators
Mixing air with water reduces the amount of water needed. The aerator also maintains constant and satisfactory water pressure.

Pipe insulation tape
Wrapping your water heater pipes is a simple way to manage water temperature in your home and saves you nearly 17 percent on your energy bill.

Installation guide and how-to video
Your kit includes a detailed, step-by-step instructional guide to help you complete the installation of your new fixtures.

To learn more about our program, visit **duke-energy.com/SaveWater** or call **866.807.1544**.

☐ YES, send me my **FREE** Save Energy and Water Kit!

I confirm that my residence has an electric water heater and that its location corresponds with my Duke Energy account on record. I will install my new fixtures at this residence only.

The barcode above is embedded with your address and account information. This system ensures your privacy and allows us to process your order quickly by scanning the barcode.

DUKE ENERGY.

Energy Efficient Appliances and Devices

The items included in this kit combine the best energy efficiency with the best performance. These devices save more energy and water than most of the low-flow devices on the market today.

In your kit, you've received:

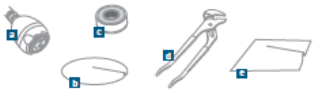
- Low-flow showerhead(s)
- Water heater pipe insulation tape
- Faucet caps with aerators for the bathroom
- Rubber easy-grip cloth
- Adjustable faucet cap with aerator for the kitchen
- Roll of pipe thread sealing tape

The following instructions will help you install these items in your home. Watch our how-to installation videos online at duke-energy.com/savewater. Then, **let the savings begin!**

Showerhead Installation

What you'll need:

a. Low-flow showerhead(s)
b. Rubber easy-grip cloth
c. Pipe thread sealing tape
d. Pliers (optional)
e. Rag



1. Remove your existing showerhead.

- Wrap the rubber easy-grip cloth around the base of your showerhead where it is attached to the shower arm.
- Turn the showerhead counterclockwise (left) to loosen.
- If the showerhead is difficult to loosen, you may need to use adjustable pliers to help remove it. Before using any tools, wrap the easy-grip cloth around the fixture to protect it from the teeth of the vise-grip or pliers during removal.

2. Apply pipe thread sealing tape.

- Once your existing showerhead is removed, wipe the pipe threads with a clean, dry cloth to remove any excess moisture.
- Stretch two layers of the white pipe thread sealing tape provided across the threads to cover them. Then cut the tape off the roll. This tape is used to seal the pipe connection and lubricate the threads for easy assembly.

3. Install your new low-flow showerhead.

- Hold the base of your new showerhead with the rubber easy-grip cloth and twist it onto the threaded area of the shower arm in a clockwise direction (right).
- You may tighten the showerhead with the rubber easy-grip cloth too, if necessary, to prevent any leaks.

4. Test your showerhead.

- Turn on the water to test your new showerhead. Look closely at the connection between the shower arm and the base showerhead collar to see if there is any water leaking.
- If the showerhead is leaking, tighten the base collar with pliers.

5. Adjusting the water flow mode.

- Your new low-flow showerhead is equipped with two different modes: massage and pulsating. You can change the modes by twisting the outer ring in both directions until you create the desired water flow.
- If you turn the outer ring all the way to the right, the water will be in massage mode. If you turn it all the way to the left, it is in full spray mode.

Troubleshooting tips:
If you have followed the installation instructions and you still find water leakage, there are three common sources of water leaks:

a. Your pipe threads are not taped properly. Please be sure to use two layers of the provided tape to ensure the seal is tight.

b. If your tape is applied correctly and the showerhead is still leaking, then your showerhead is cross-threaded. Unscrew and reinstall it, making sure you are lining up the threads.

c. In some cases, your showerhead may not be properly tightened. Please wrap the easy-grip cloth around your new fixture to protect it, and then use pliers over the cloth to ensure a fully tight connection between your shower arm and your new showerhead.

Try these troubleshooting tips before calling Energy Federation Inc. (EFI) customer service at 866.807.1544.

Faucet Aerator Installation
(for both kitchen and bathroom)

What you'll need:

a. Faucet caps with aerators*
b. Rubber easy-grip cloth
c. Pliers (optional)

* If you experience trouble installing the kitchen aerator or it does not fit, call 866.807.1544. We will ship you a free adapter.

1. Remove your existing faucet cap.

- Using the rubber easy-grip cloth, unscrew your faucet cap in a counterclockwise (left) direction.
- Your faucet arm will have threads on the inside (female) or threads on the outside (male). If your faucet arm has female threads, use the male rubber washer to align and install your new faucet cap and aerator. If your faucet arm has male threads, use the female rubber washer provided.

2. Install your new faucet cap with aerator.

- Install the new faucet cap by aligning the threads on the inside of the faucet arm with the exterior threads of the new cap.
- Gently screw in the faucet cap in a clockwise (right) direction until it is firmly connected. Tighten it fully with the rubber easy-grip cloth provided.

Energy Efficient Appliances and Devices

3. Install your new tri-flow faucet cap in your kitchen or wherever you'd like variable water flow.

- Align the threads on the inside of your faucet arm with the exterior threads of the new cap and gently screw the faucet cap into the faucet in a clockwise (right) direction until it is firm.
- You can use the dial on this aerator to adjust the flow of water at three different rates: from .5 to 1 to 1.5 gallons per minute (gpm). You could use the lowest setting for hand washing, the middle setting for washing dishes and the highest setting for filling pots or the sink.

4. Test your new aerator(s).

- Turn on your faucet and test the flow of your new aerator. While the water is flowing, look closely for any leaks at the threads.
- If you notice a leak or spray, tighten the cap with the rubber easy-grip cloth.
- If you installed the tri-flow cap, turn the black dial to the left or right while the water is running to understand how you can adjust the water flow to save water and energy.

Troubleshooting tips:
If you have followed the installation instructions and have trouble installing the aerator or still find water leakage, here are some easy solutions:

a. Make sure the existing washer from your faucet is removed. It might have gotten stuck inside your faucet after you removed your aerator. If so, feel inside the pipe with your finger to remove the existing washer.

b. Ensure your faucet caps and faucet arms are not cross-threaded. Remove the aerator and reinstall it, making sure you align the threads.

c. In some cases, your faucet cap(s) may not be properly tightened. Make sure the new caps are fully screwed into the faucet.

Please try these troubleshooting tips before calling EFI customer service at 866.807.1544.

Water Heater Pipe Wrap Insulation Tape Installation

Why is conserving energy used to heat your water important?

The energy needed to heat water can represent a large portion of your monthly energy bill. Wrapping your hot water pipes is a simple way to manage water temperature in your home and save on your energy bill.

What you'll need:

a. Insulation sealing tape
b. Scissors (not included)

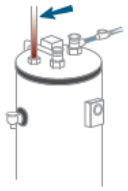
One roll contains 15 feet of tape. The length of pipe you will be able to cover will depend on the diameter of the pipe and the precision with which the insulation tape is installed.

1. Locate the hot water pipe for your water heater.

- Locate the hot water pipe that extends out of the top or side of your water heater. **Caution**: The hot water pipe will be very warm to the touch. Note the length of that pipe where it leads out of the electric water heater and up into the subfloor or walls of your home.

2. Wrap your pipe with the tape.

- First, make sure the pipe is both clean and dry.
- Then, carefully wrap the tape fully around the exposed length of the pipe – making sure that the edges of the tape meet each time you wrap it around the pipe. It's important to not leave any of the pipe exposed to ensure maximum insulation and energy savings.



- This type of insulation can be applied to pipes of any size or shape, and you can wrap it around your pipe valves and bends, as well as the pipe itself.
- If you need more insulation tape than what was provided in your kit, you can purchase an additional roll at your local home improvement store.

Maintaining Your Money-Saving Showerheads and Aerators

Sometimes faucet aerators can become clogged with small debris. If that happens, you can easily restore your water flow:

- Unscrew the tip of your faucet cap.
- Remove the aerator (it looks like a circular screen).
- Rinse it and place it back in the faucet cap.
- Screw the entire cap back onto the faucet.
- If the aerator appears corroded or worn, take it to your local home improvement store to purchase a new one.

If the water pressure from your low-flow showerhead has decreased, the holes in the showerhead are probably clogged with minerals from the water supply. To restore your water pressure:

- Wipe any dry debris from the holes with a scrubber sponge.
- Mix a solution of equal parts white vinegar and water (you'll need one cup of liquid total).
- Pour the solution into a plastic bag.
- Put the plastic bag around the showerhead so the holes are submerged in the liquid.
- Secure the bag to the shaft with a twist tie or rubber band and let it soak for 20 minutes.
- Remove the bag and wipe away loosened debris; run the shower on hot to flush the holes.

Learn more about water conservation measures and other bright ideas to help you save energy and money at duke-energy.com/savewater or email us at customerservice@efi.org.

View our installation videos online at duke-energy.com/savewater.

The Save Energy and Water Kit program is available to qualifying customers of all Duke Energy utilities, except in Duke Energy Florida.

DUKE ENERGY.

Save Energy and Water Kit

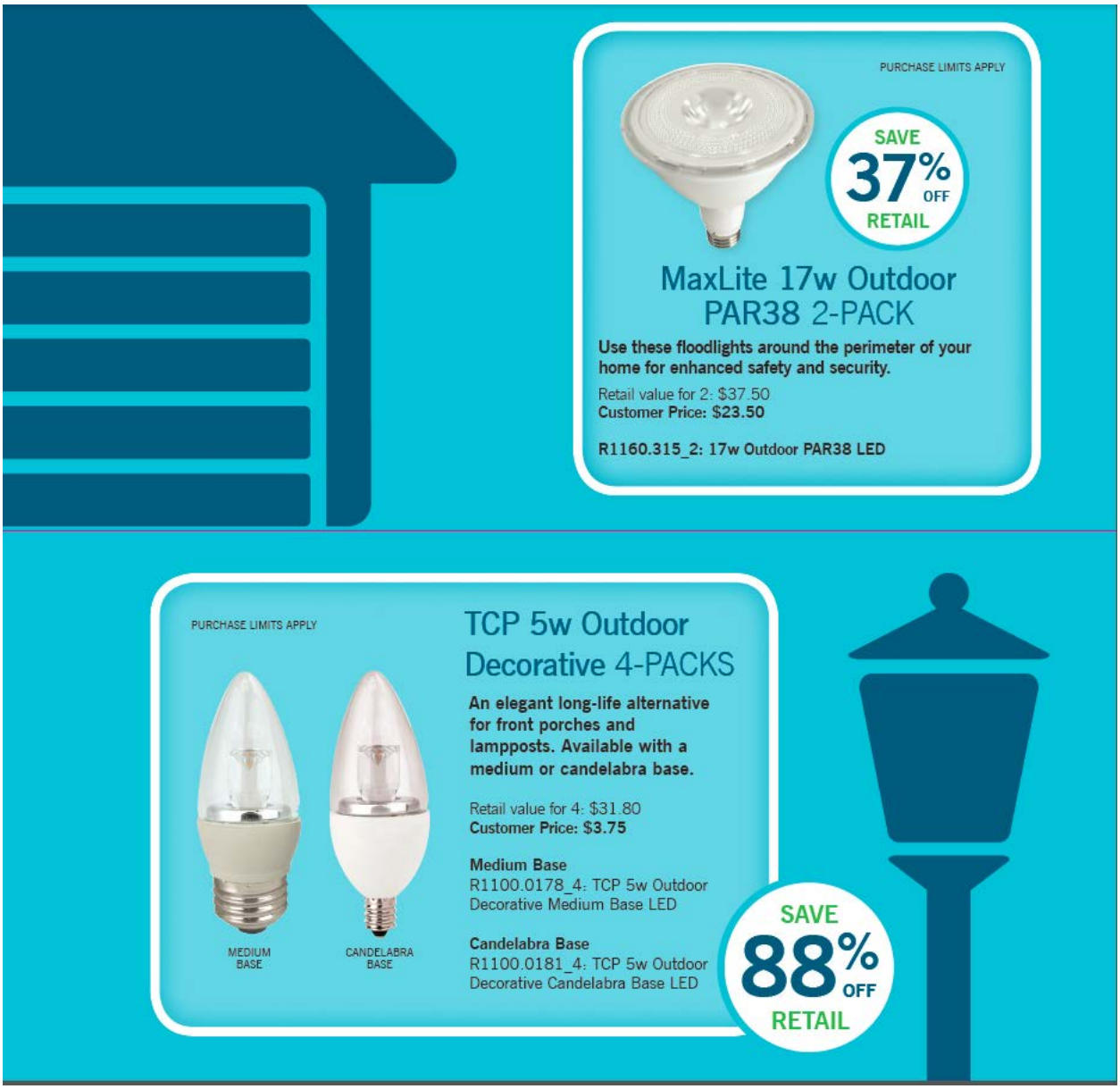
Installation guide

Energy Efficient Appliances and Devices

Online Savings Store

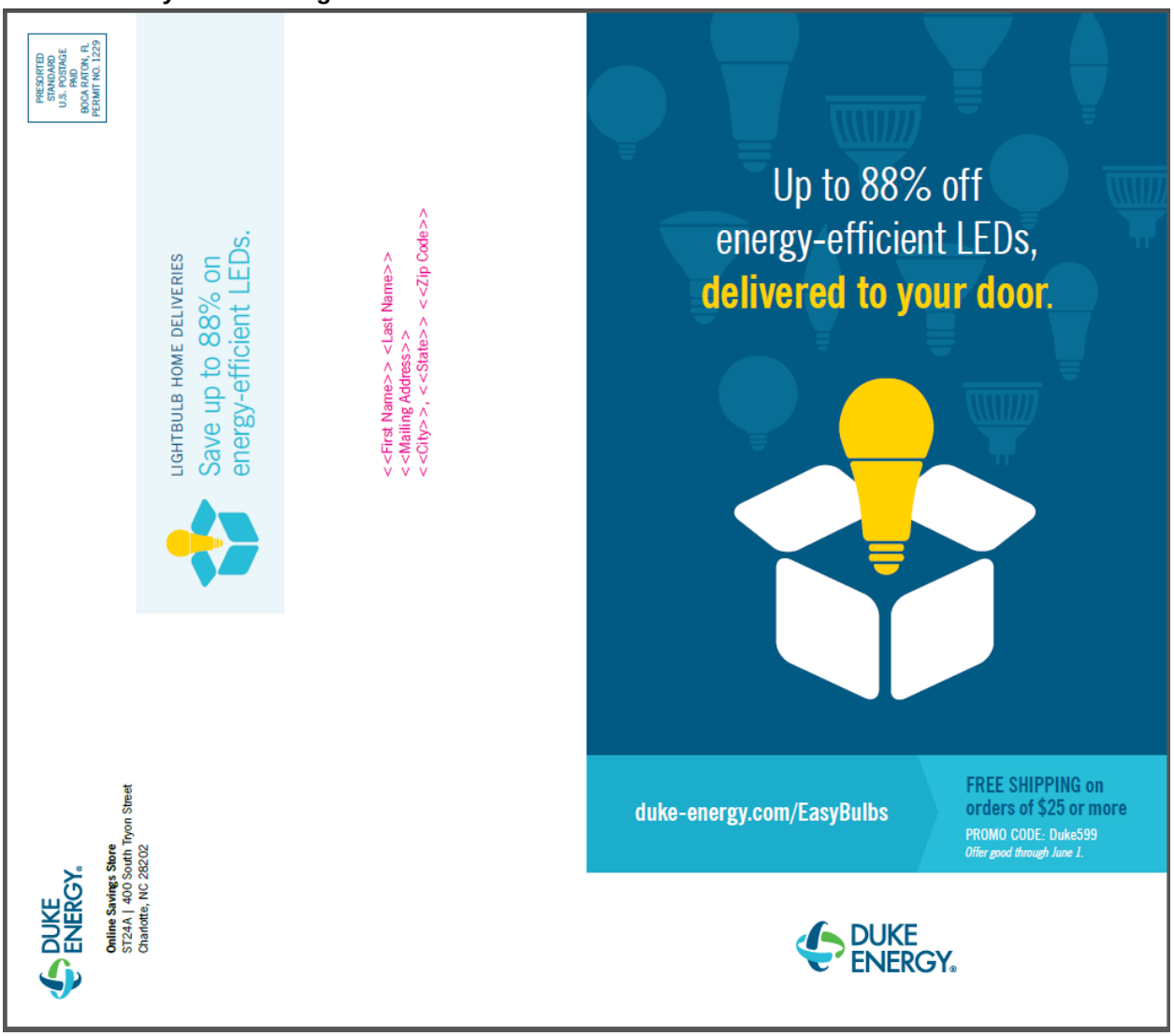
Outdoor Bundle–

Energy Efficient Appliances and Devices



Energy Efficient Appliances and Devices

Home Delivery Mini Catalog-



Energy Efficient Appliances and Devices

FIND THE RIGHT LIGHT FOR EVERY ROOM IN YOUR HOME.

1. Order your bulbs.
2. Install them.
3. Save today and every day.

With prices this low, it's simple to switch to energy-efficient lights – and to start saving on your monthly energy bill.
Order now while supplies last!

Visit **duke-energy.com/EasyBulbs** or call **866.849.9704** to order by phone.
Before placing your order, please have your account number or the account holder's phone number on hand.

Purchase limit of 36 bulbs per account.

Customer agrees to the Terms and Conditions when placing an order. Offer good while supplies last. The total limit per customer account, for all categories of bulbs, is 36 at the incented price. If you previously purchased from our Savings Store and are over that limit, you are ineligible to receive the deep discounts but may still purchase competitively priced bulbs through our online store. Duke Energy reserves the right to substitute bulbs with an equal or higher quality bulb. Products, prices, availability, specifications and offers are subject to change without notice. Duke Energy Savings Store is available for eligible Duke Energy residential customers in NC, SC, IN, OH and KY. Customers must log in to reach the online store using their Duke Energy account number or phone number and the last four digits of their Social Security number to authenticate their eligibility. Duke Energy, 400 South Tryon Street, Charlotte, NC 28202.

FREE SHIPPING on orders of $25 or more

PROMO CODE: Duke599
Offer good through June 1.

SEE EVEN MORE BULB DEALS AT duke-energy.com/EasyBulbs.

DECORATIVE
For chandeliers, bathroom vanity lighting and ceiling fans

(R1100.1315)
Philips LED Candelabra Base Flame Tip
Same as 40w, only uses: 4.5 watts
Retail: $8.97; **you pay: $1.97**

(R1100.1326)
Philips LED E12 Blunt Tip
Same as 25w, only uses: 3.5 watts
Retail: $7.97; **you pay: $0.97**

(R1100.0181)
TCP LED Torpedo Candelabra
Same as 40w, only uses: 5 watts
Retail: $7.97; **you pay: $0.97**

GENERAL PURPOSE
For reading lamps and overhead fixtures

(R1100.4074)
TCP A Lamp LED
Same as 40w, only uses: 7 watts
Retail: $4.97; **you pay: $1.97**

(R1100.1557)
Philips A Lamp LED
Same as 100w, only uses: 18 watts
Retail: $11.97; **you pay: $8.97**

(R1100.9312)
Philips A19 LED
Same as 40w, only uses: 6 watts
Retail: $5.50; **you pay: $2.50**

GLOBES
For pendants, bathroom vanity lighting and ceiling fans

(R1100.539)
TCP G25 LED
Same as 25w, only uses: 5 watts
Retail: $8.97; **you pay: $3.97**

(R1100.542)
Philips Globe LED
Same as 40w, only uses: 7 watts
Retail: $7.95; **you pay: $2.95**

3-WAY
For table lamps and floor lamps

(R1100.8283)
Philips A21 LED
40W/60W/100W, only uses: 5/8/18 watts
Retail: $13.97; **you pay: $6.97**

REFLECTORS
For recessed lighting, over-stove lighting and small lamps

(R1160.315)
MaxLite PAR38 LED
Same as 90w, only uses: 17 watts
Retail: $19.97; **you pay: $12.97**

(R1160.846)
GE BR30 LED
Same as 65w, only uses: 10 watts
Retail: $8.50; **you pay: $1.50**

(R1160.9941)
TCP Downlight Module LED
Same as 60w, only uses: 11 watts
Retail: $13.95; **you pay: $6.95**

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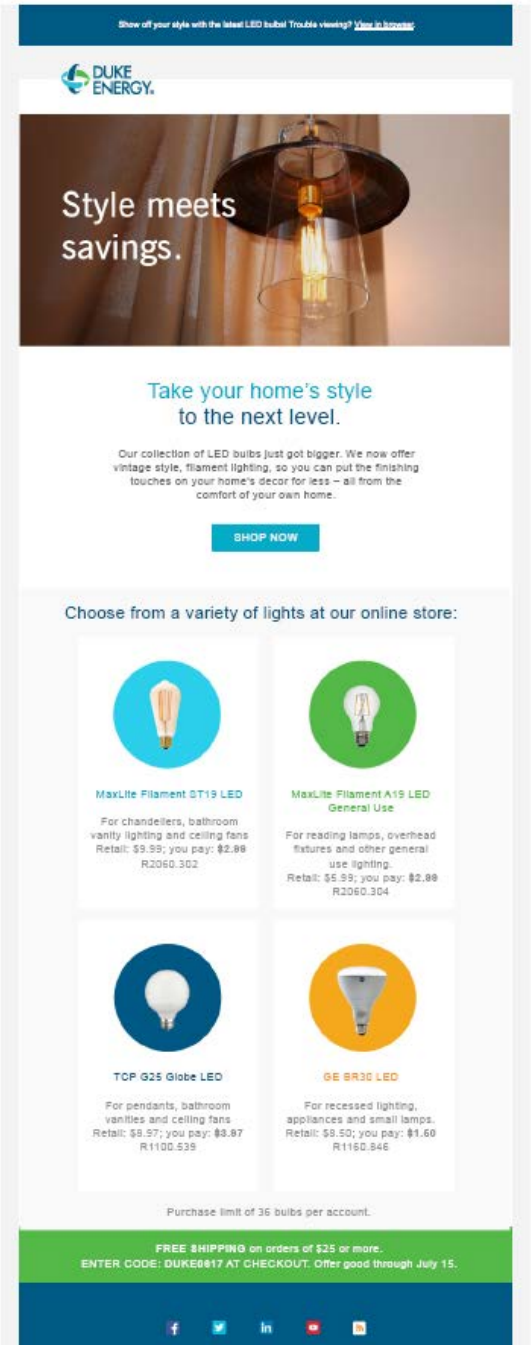
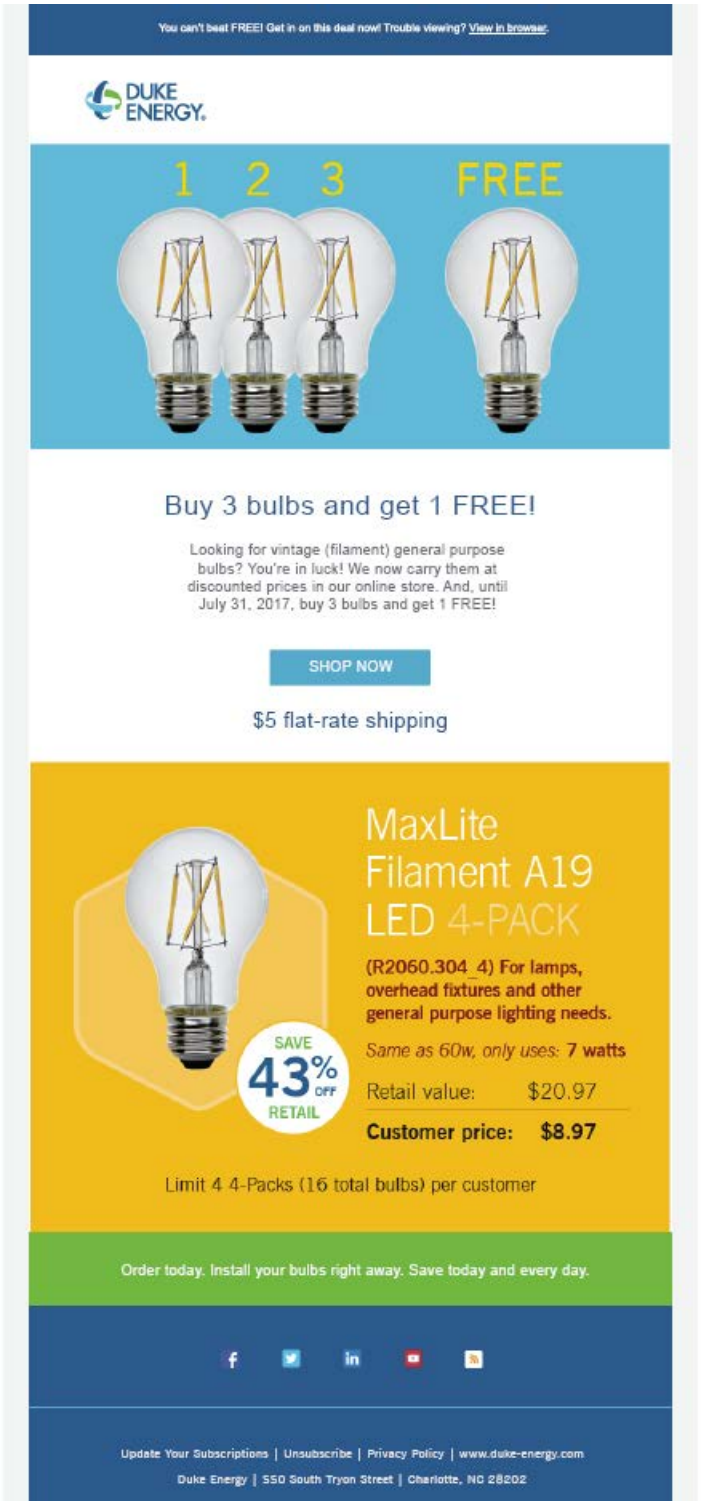
Style Meets Savings Mini Catalog-



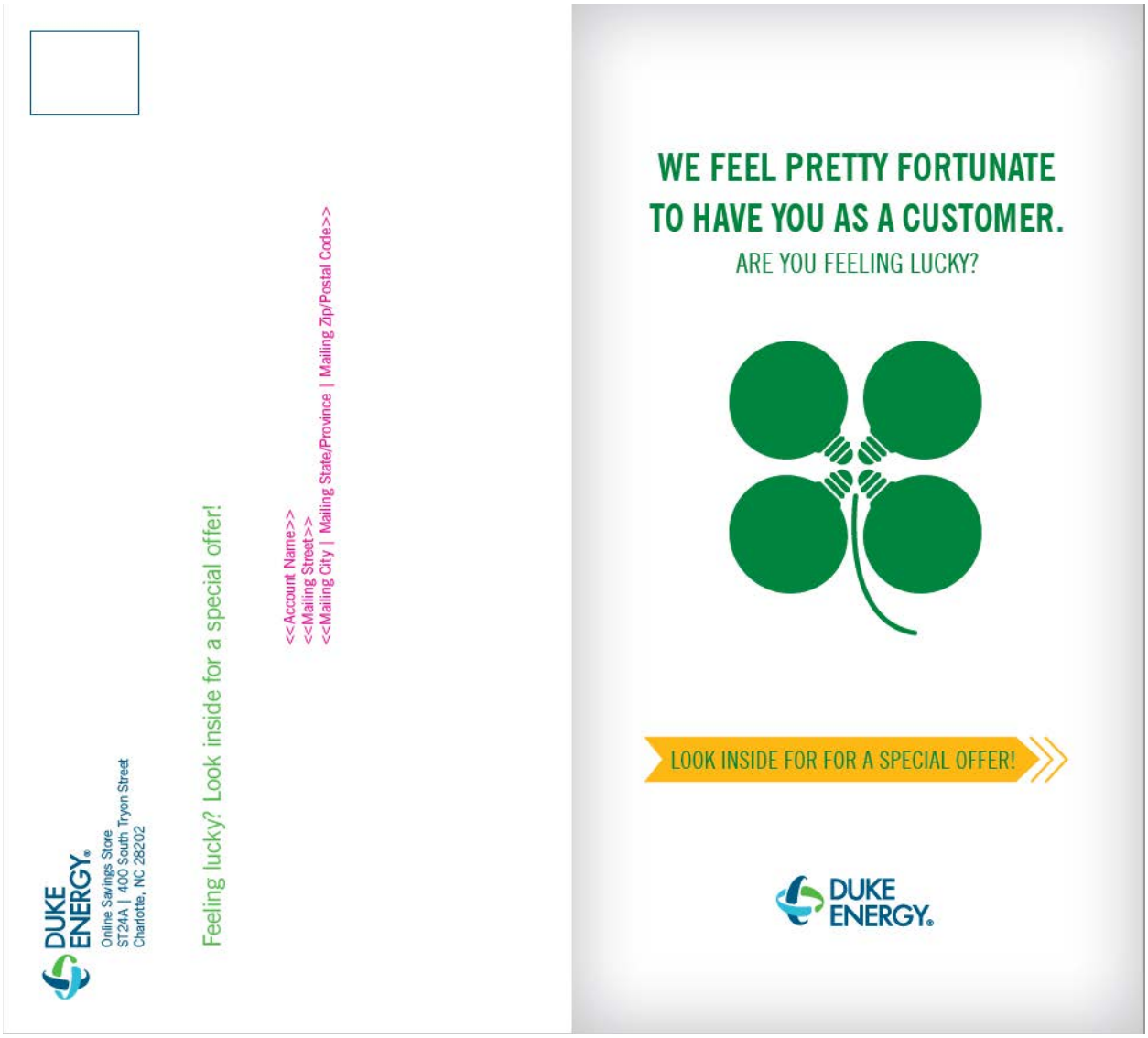
Energy Efficient Appliances and Devices

Buy 3, Get 1 Free Vintage Bulbs



Energy Efficient Appliances and Devices

Thank You Campaign



Energy Efficient Appliances and Devices

YOU'VE ONLY SCRATCHED THE SURFACE.

Thank you for shopping at our online store to find great deals on energy-efficient lighting. We appreciate your business and want to help you save even more, so we're giving you **a special offer on your next order**.

We're adding more bulbs all the time, so come back and see what else we have in store.

Order today and get FREE shipping.

Install your bulbs right away.

Save today and every day.

Customer agrees to the terms and conditions when placing an order. Offer good while supplies last. The total limit per customer account, for all categories of bulbs, is 36 at the incented price. Duke Energy reserves the right to substitute bulbs with an equal or higher quality bulb. Products, prices, availability, specifications and offers are subject to change without notice. Duke Energy Savings Store is available for eligible Duke Energy residential customers in NC, SC, IN, OH and KY. Customers must log in to reach the online store using their Duke Energy account number or phone number and the last four digits of their Social Security number to authenticate their eligibility. Duke Energy, 400 South Tryon Street, Charlotte, NC 28202.

SCRATCH TO SEE YOUR SPECIAL OFFER

WOAH! You get

off your next purchase!

Just visit **duke-energy.com/LUCKYME** and enter promo code **ThankYou617** at checkout.

Hurry, this offer ends Aug. 31, 2017!

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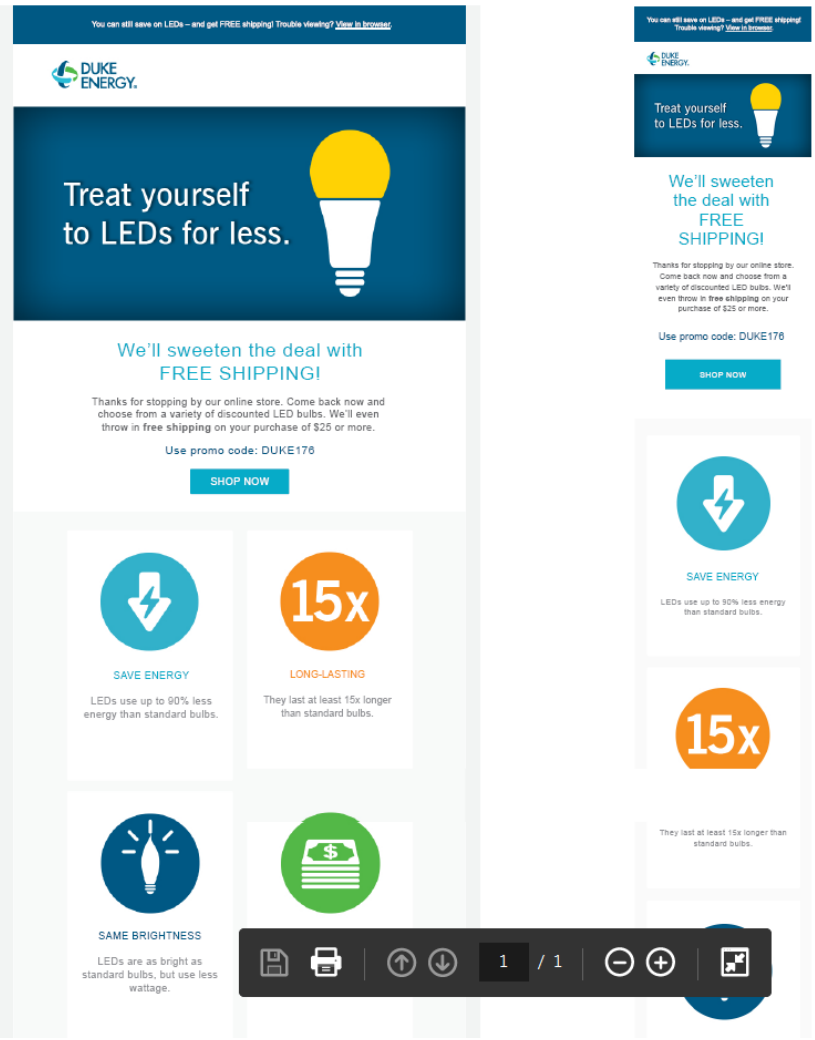
Intercept Enagement-



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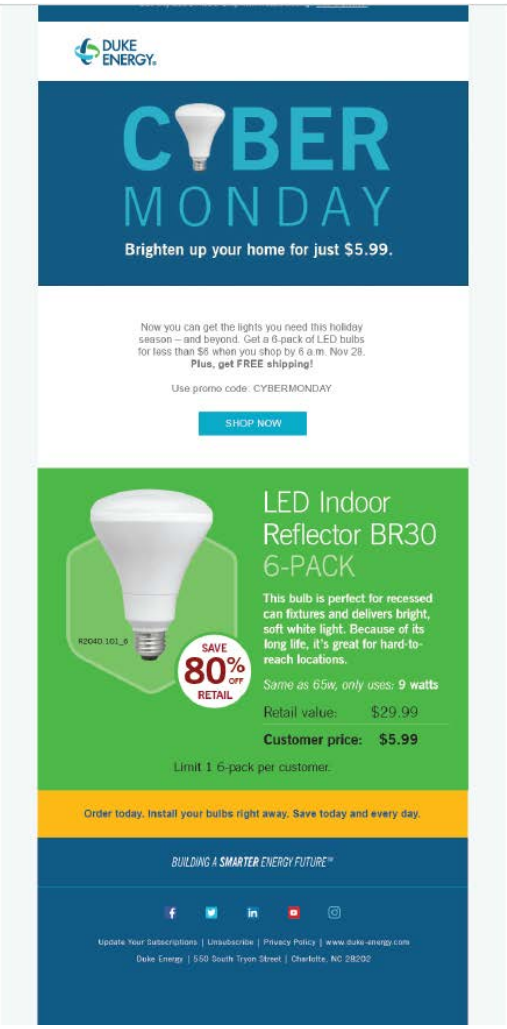
Cyber Monday-



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Holiday Promotion-

Energy Efficient Appliances and Devices

High Efficiency Pool Pump Digital Ad

Energy Efficient Appliances and Devices

High Efficiency Pool Pumps Email

Pool costs sending you off the deep end?

We can help.

As a Duke Energy customer, you can get paid to improve your pool. Save up to $640* in the first year when you upgrade to a quieter, more efficient pool pump.

Install an ENERGY STAR® certified variable-speed pool pump:

- Get a $300 rebate
- Pays for itself in less than two years
- Saves you up to $340 each year in energy costs
- Makes your pool cleaner, with less maintenance

Call 866.785.6209 or visit **duke-energy.com/Splash** for eligibility requirements – and let the summertime savings begin.

*$300 rebate + $340 energy savings

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Charlotte, NC 28202

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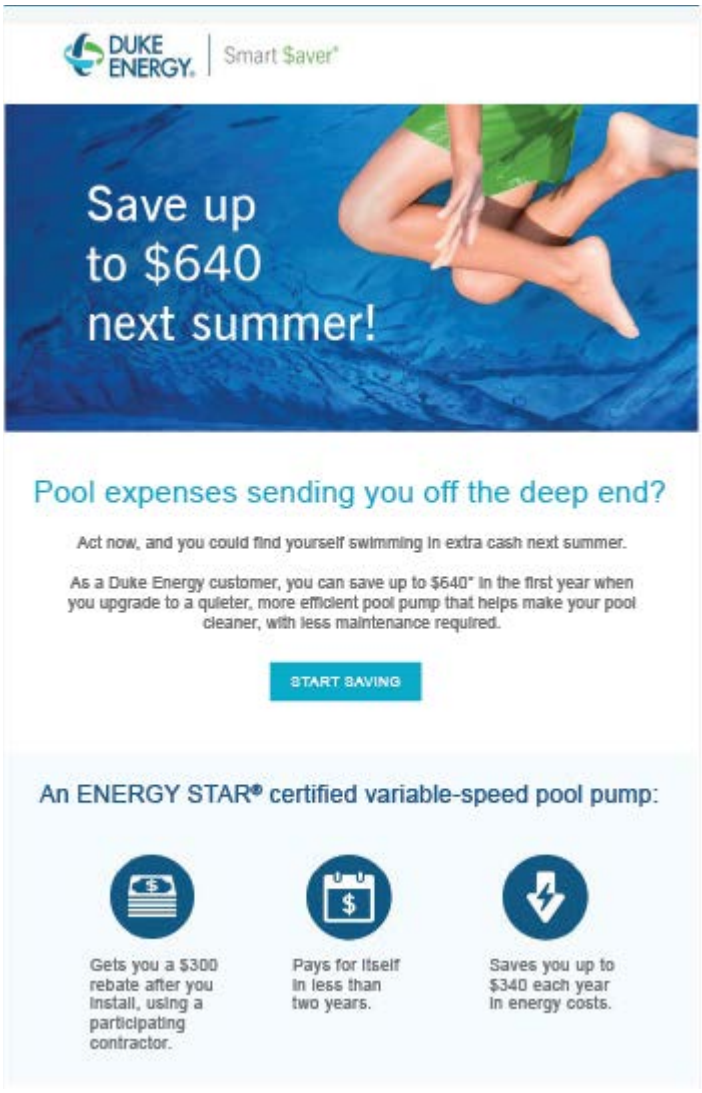

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High Efficiency Heat Pump Water Heater National Retailer Display

Energy Efficient Appliances and Devices

High Efficiency Pool Pump Facebook Posting

Energy Efficient Appliances and Devices

High Efficiency Heat Pump Water Heater Digital Media

Energy Efficiency Education Program

A. Description

The Energy Efficiency Education Program ("Program") is an energy efficiency program offered in the Duke Energy Carolinas (the "Company" or "DEC") service territory. The Program is available to students in grades K-12 enrolled in public and private schools who reside in households served by the Company. The current curriculum administered by The National Theatre for Children ("NTC") targets K-8 grade students.

The Program provides principals and teachers with an innovative curriculum that educates students about energy, resources, how energy and resources are related, ways energy is wasted and how to be more energy efficient. The centerpiece of the curriculum is a live theatrical production performed by two professional actors focused on concepts such as energy, renewable fuels and energy efficiency. Teachers receive supportive educational material for classroom and student take home assignments. The workbooks, assignments and activities meet state curriculum requirements.

School principals are the main point of contact responsible for scheduling their school's performance at their convenience. Once the principal confirms the performance date and time, two weeks prior to the performance, all materials are delivered to the principal's attention for classroom and student distribution. Materials include school posters, teacher guides, and classroom and family activity books.

Students are encouraged to complete a home energy survey with their family (found in their classroom and family activity book, as well as online), to receive an Energy Efficiency Starter Kit. The kit contains specific energy efficiency measures to reduce home energy consumption. It is available at no cost to student households at participating schools.

Audience

Eligible participants include the Company's residential customers who reside in households served by Duke Energy Carolinas with school-age children enrolled in public and private schools.

B &C. Impacts, Participants and Expenses

Energy Efficiency Education[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$3.4	$3.6	105%
Program Cost	$2.3	$2.1	91%
MW	1.3	1.4	106%
MWH	5,604.4	5,932.1	106%
Units	26,250	27,785	106%

1) Values are reflected at the system level.

2) Numbers rounded.

D. Qualitative Analysis

Highlights

For the seventh straight year, the Company is supporting arts and theatre in schools while providing an important message about energy efficiency through an innovative delivery channel for students. Enhancing the message with a live theatrical production truly captivates the students' attention and reinforces the classroom curriculum materials provided.

Energy Efficiency Education Program

The 2016-2017 school year offered two new productions in partnership with the Program vendor, The National Theatre for Children (NTC). The elementary school production, *The Conservation Caper,* is a 25 minute performance for elementary students and teaches them how to use resources wisely through a fun superhero adventure featuring Nikki Neutron and a cast of colorful characters. *The Energy Agents*, a 40-minute performance, is designed for middle school students. This production combines sketch comedy with improvisation and audience participation to teach students about natural resources and energy efficiency while complimenting student studies in science and energy.

For the 2017-2018 school year, elementary students enjoy watching as Lorraine Quiche is just about to realize her dream of opening her own restaurant. Unfortunately, her top chef, Chuck Wagon, has been wasting energy and now the power's gone out! Without electricity, she'll get a bad review from food critic Eggs Benedict Arnold! So Lorraine sets out to learn how to measure how much energy we use and how we can reduce the energy we waste. With the help of Horace Flyman, a sanitation engineer, and zookeeper Adam Grizzly, Lorraine learns how to use energy wisely and saves the day for her Kilowatt Kitchen! The E-Team is a 40 minute, live show for Middle schoolers, grades six through nine. The program consists of two actors with two goals. The first goal is to highlight how we measure energy, the uses of energy, how energy is wasted and renewable resources. The second goal is to make the middle school students laugh so hard that they forget they're learning.

The show is a series of improvised comedy sketches between characters in all sorts of hilarious situations. Before each scene, actors interact with the audience and get ideas that will be used during the sketch, such as their favorite band or a household pet. The ideas are incorporated into the show and may change the course of a scene.

During the spring semester of the 2016-2017 school year, a total of 216 schools were visited in the Company's DEC service territory and approximately 115,861 students were reached with the Program, resulting in 15,923 kits distributed. During the fall semester of the 2017-2018 school year, a total of 328 schools hosted 535 performances and approximately 127,368 students were reached with the Program, resulting in 11,862 kits distributed. Overall participation for 2017 totaled 27,785.

Once the completed energy efficiency survey is processed for an eligible customer, the Energy Efficiency Starter Kit is shipped and received within two to four weeks. To ensure customer satisfaction with the Energy Efficiency Starter Kit and the installation of items, an email reminder is sent monthly after successful kit delivery to encourage families to return their Business Reply Card (BRC). Qualified households that have submitted their energy efficiency survey and returned the BRC are automatically entered into the household contest drawing, sponsored by NTC.

Additionally, school and classroom contests encourage sign ups and NTC awards checks to schools whose students, along with their families completed home energy surveys and received energy efficiency kits as part of the Program. In the fall and spring of each year, a drawing is held selecting one school and one household contest winner. Principals, teachers and students may view their school's progress and compare the number of sign ups to other schools via the website, www.trackmysignups.org.

Updates

The Company continues to enhance the Program by:

- Introducing two new productions each school year to refresh and refocus the materials and scripts to keep participating schools engaged.

- Promoting the program through social media to encourage awareness, recognition and participation.
- Partnering with Duke Energy Account and District Managers to leverage existing relationships in the community to develop positive media stories while encouraging kit sign ups.
- Offering teacher satisfaction survey evaluations after the performances for both the elementary and middle school shows. Average survey data from January through December indicated 95% of the Elementary teachers surveyed and 92% of Middle School teachers surveyed had very high satisfaction ratings.
- Enhance the offering by providing additional materials for all student households, but particularly those that have already received the current Energy Efficiency Starter Kit as well as non-Duke Energy customer student households. This will increase customer satisfaction and provide additional energy savings impacts for all customers, but particularly those customers that would otherwise have been excluded from the kit offering.

E. Marketing Strategy

The National Theatre for Children is responsible for all marketing campaigns and outreach. NTC utilizes direct mail and email sent directly to principals to market the Program.

F. Evaluation, Measurement and Verification

The next evaluation work is planned as a combined Duke Energy Carolinas and Duke Energy Progress process and impact evaluation. Evaluation activities will begin third quarter of 2018, with a final report to be delivered in Fourth Quarter of 2018.

The goal of the impact evaluation is to assess the net energy savings attributable to the Program, as well as the persistence of the energy savings over time. The independent, third-party EM&V consultant will determine the detailed analysis methodologies, sample design and data collection activities. The impact evaluation for this Program is expected to consist of engineering estimates and a billing analysis.

Where applicable, a statistically representative sample of participants will be selected for the analysis. The Company intends to follow industry-accepted methodologies for all measurement and verification activities, consistent with International Performance Measurement Verification Protocol (IPMVP) Options A, C or D depending on the measure.

Energy Assessments

A. Description

The Home Energy House Call Program ("Program") is offered under the Energy Assessment Program. Duke Energy Carolinas, LLC (the "Company") partners with several key vendors to administer the Program.

The Program provides a free in-home assessment performed by a Building Performance Institute ("BPI") certified energy specialist designed to help customers reduce energy usage and save money. The BPI certified energy specialist completes a 60 to 90 minute walk through assessment of a customer's home and analyzes energy usage to identify energy savings opportunities. The energy specialist discusses behavioral and equipment modifications that can save energy and money with the customer. The customer also receives a customized report that identifies actions the customer can take to increase their home's efficiency. Examples of recommendations might include the following:

- Turning off vampire load equipment when not in use.
- Turning off lights when not in the room.
- Using energy efficient lighting.
- Using a programmable thermostat to better manage heating and cooling usage.
- Replacing older equipment.
- Adding insulation and sealing the home.

In addition to a customized report, customers receive an energy efficiency starter kit with a variety of measures that can be directly installed by the energy specialist. The kit includes measures such as energy efficiency lighting, low flow shower head, low flow faucet aerators, outlet/switch gaskets, weather stripping and an energy saving tips booklet.

Audience

Eligible Program participants are Company's residential customers that own a single-family residence with at least four months of billing history and have central air, electric heat or an electric water heater.

B &C. Impacts, Participants and Expenses

Energy Assessments[1]

$ in millions, rounded[3]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	**$8.7**	**$7.3**	**83%**
Program Cost	**$2.6**	**$2.9**	**113%**
MW	**1.0**	**1.3**	**130%**
MWH	**7,923.1**	**8,131.8**	**103%**
Units[2]	**8,038**	**10,014**	**125%**

1) Values are reflected at the system level.

2) Units represent number of kits, and do not include additional LEDs

3) Numbers rounded.

D. Qualitative Analysis

Highlights

The Company continues with a multi-channel approach which included Duke Energy website pages, website banners, online services banner, paid search campaigns, Pandora, Facebook, email, bill inserts, bill messages and direct mail. We continue to utilize Acxiom segmentation to reach customers with a high propensity to participate . Examples of online, bill inserts and direct mail promotions are available in the appendix. We continue to explore other channels for our marketing campaigns to reach our target audience and maximize both program performance as well as customer experience.

Communication channels amongst vendors, partners and the team at Duke Energy continue to be optimized to maximize collaboration regarding marketing initiatives, future scheduling, availability, routing, targeting, backlog, etc. to drive efficient operations as well as customer satisfaction.

Through December 2017 the program has conducted 10,014 assessments and installed 42,532 additional LEDs. The program continues to focus on maximizing measures installed as well as cross promoting other Duke Energy programs and offerings

Potential Changes

Some program enhancements to increase the effectiveness of the Program being considered include:

- Continuing to optimize the online scheduling tool to enhance the customer experience.
- Exploring cost effective approach to include thermal imaging as part of the assessment in response to customer feedback and requests.
- Considering replacing the current showerhead with a chrome version to increase installation based on customer feedback and or shifting away from a bundled kit to a custom installs only.
- Continue to evaluate the incentive offerings to maximize savings and impacts as well as customer acceptance.
- Expand referral program integration as part of the assessment for quality leads to all advisors.
- Upgrade kit to include chrome showerheads.
- Implement pilot to include Home Energy Score in partnership with the Greater Cincinnati. Energy Alliance and Department of Energy.
- Remove four month usage eligibility requirement.
- Include eligibility for audit for townhomes/condos.
- Implement post audit follow up with reminders of recommendations/referrals.
- Develop a plan for post audit Q/A check to gain insights from customers to proactively obtain customer feedback and identify improvement or EM&V opportunities.
- Evaluate tiered audit option.

E. Marketing Strategy

Program participation continues to be driven through a multichannel approach including targeted mailings to pre-qualified residential customers, bill inserts, online promotions and online video. For those who elect to receive offers electronically, email marketing continues to be used to supplement direct mail. Information about the Program was included in the My Home Energy Report distributed in January 2017 and July 2017. The Program management team continues to explore additional channels to drive awareness including but not limited to community outreach and event marketing as well as other cross promotional opportunities. The creative continues to drive engagement and interest in the program based on online survey results and enrollment. The core messaging continues to be simple and focused on key benefits: (a free energy assessment from Duke Energy can help save energy and money while also increasing comfort) and (three easy steps: you call, we come over, you save).

Home Energy House Call program information and an online assessment request form are available at www.duke-energy.com.

F. Evaluation, Measurement and Verification

Energy Assessments

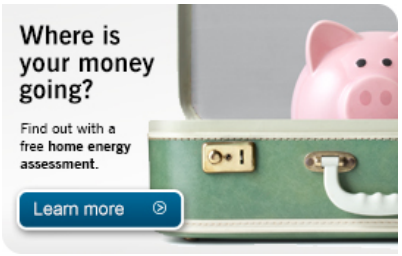
The next process and impact evaluation report for the DEC Home Energy House Call program is scheduled for completion in third quarter of 2018 with activities beginning late 2017.

It is expected that the impact evaluation will consist of a billing analysis. Engineering estimates for each measure will be provided to program management to allow insights into in-service rates and free ridership. However, due to the billing analysis methodology, impacts are inherently provided for net savings.

The process evaluation activities will consist of interviews with program managers and implementation contractors to identify any needed improvements in program processes. Participant surveys will be conducted to ascertain satisfaction with the program.

G. Appendix: 2016 Marketing Samples

Online Banners:



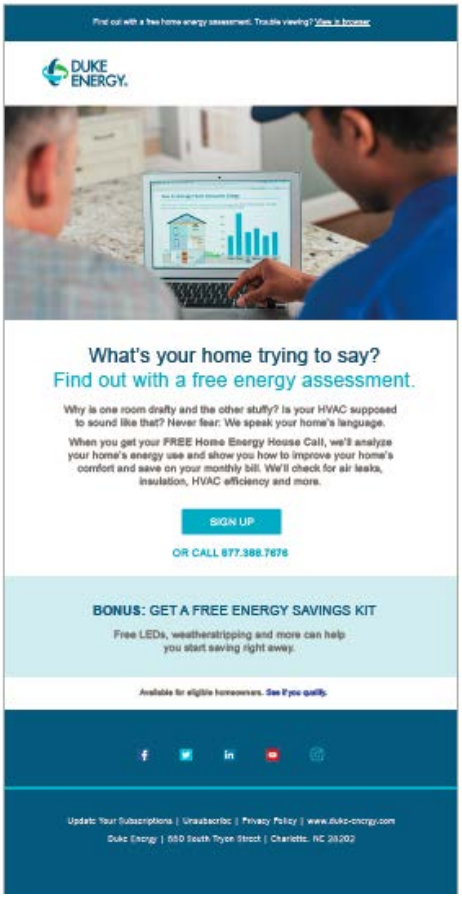
Energy Assessments

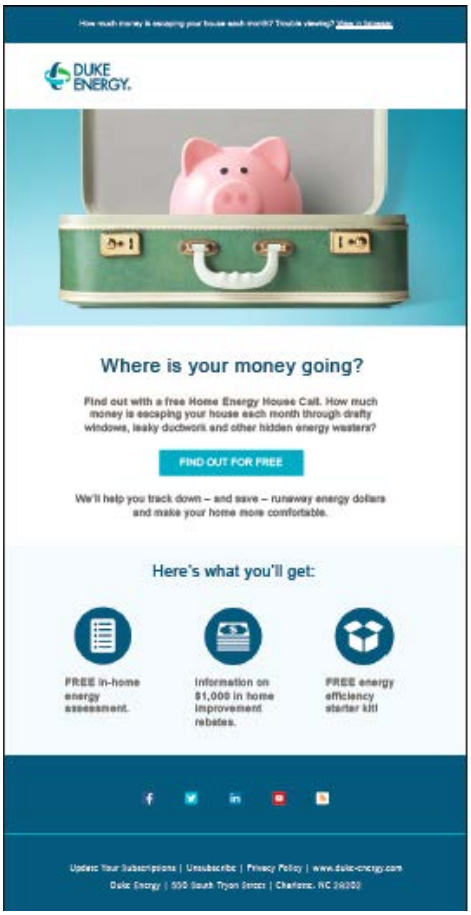
Free home energy assessment >

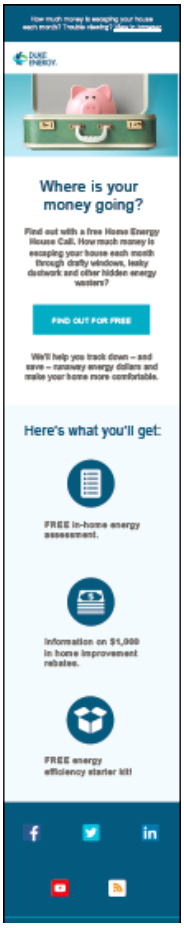
Find ways to save energy and money in your home.

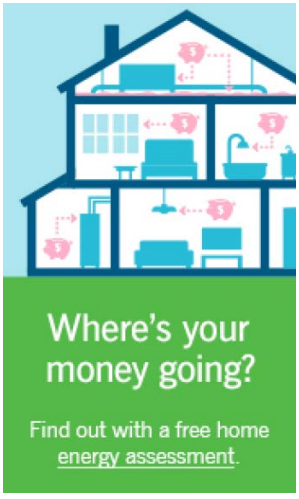
Energy Assessments

Email:



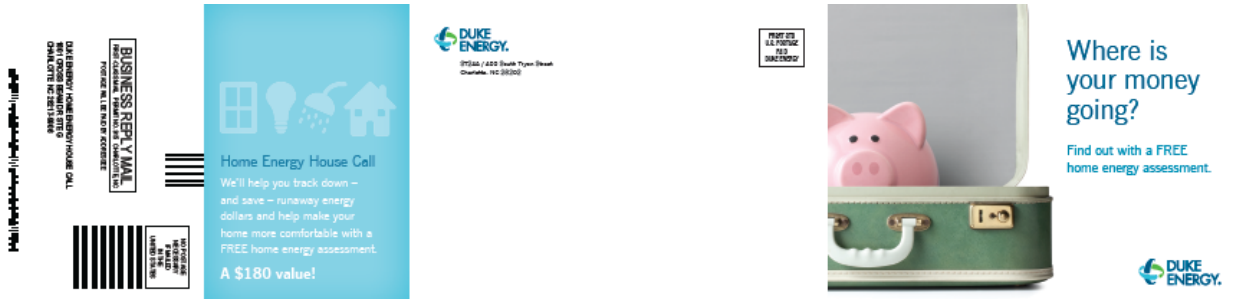




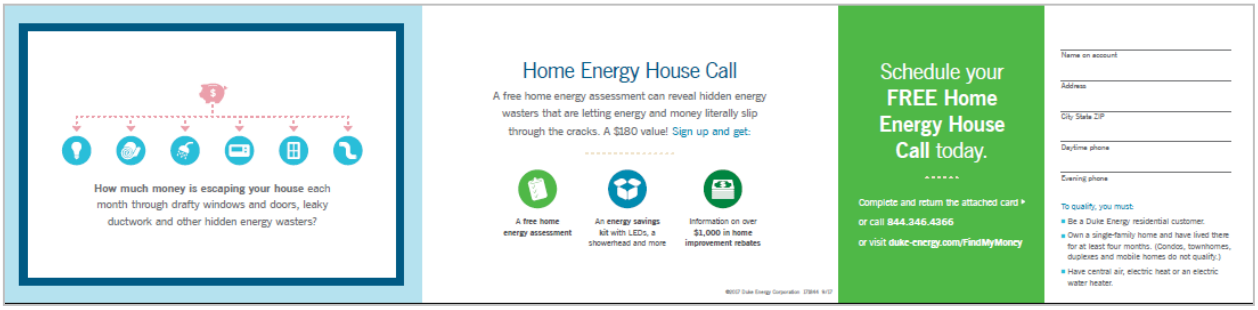


Energy Assessments

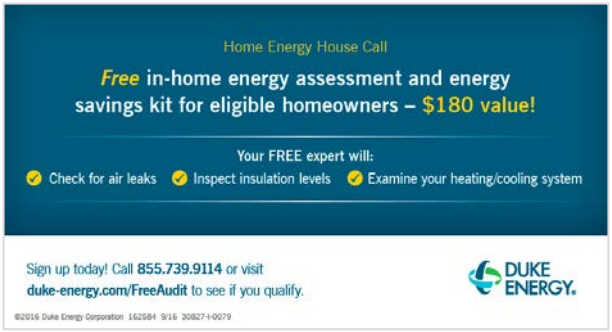
Direct Mail:



Energy Assessments



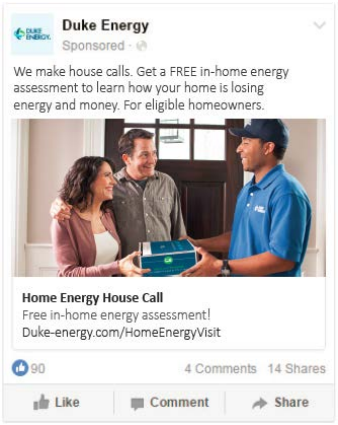
Bill Inserts:

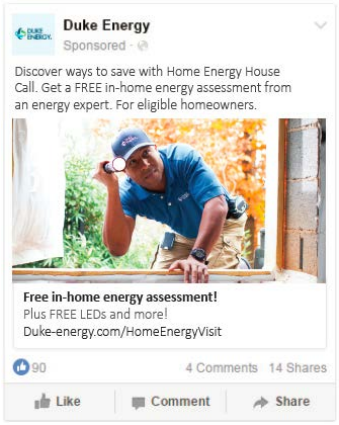


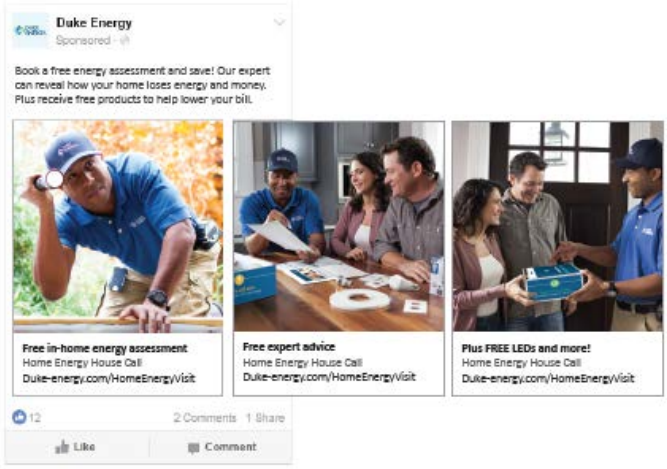
Energy Assessments

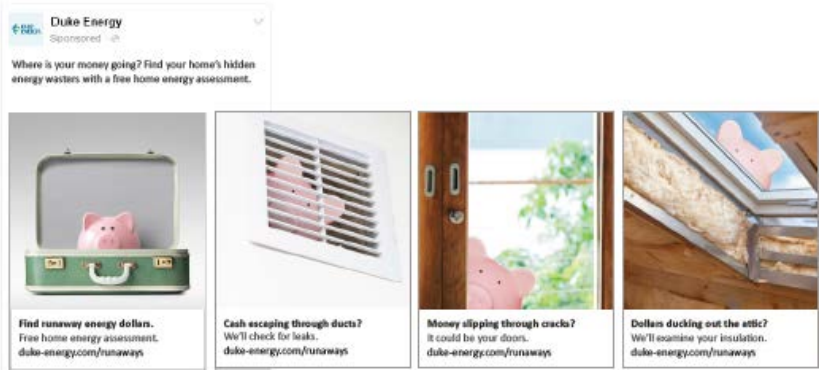
Pandora

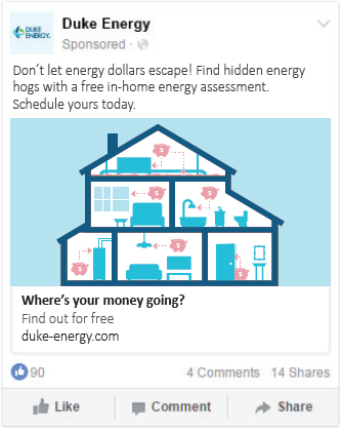
Facebook

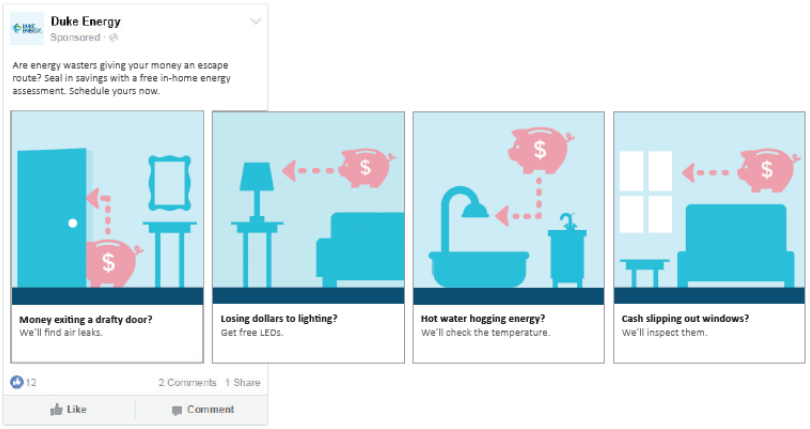












Income-Qualified Energy Efficiency and Weatherization Assistance Program

A. Description

The purpose of the Low Income Energy Efficiency and Weatherization Assistance Program ("Program") is to assist low income customers with energy efficiency measures in their homes to reduce energy usage. There are three offerings currently in the Program:

- Neighborhood Energy Saver ("NES")
- Weatherization and Equipment Replacement Program ("WERP")
- Refrigerator Replacement Program ("RRP").

WERP and RRP are available for income-qualified customers in Duke Energy Carolinas, LLC's (the "Company's") service territory for existing, individually metered, single-family, condominiums, and mobile homes. Funds are available for (i.) weatherization measures and/or (ii.) heating system replacement with a 15 or greater SEER heat pump, and/or (iii.) refrigerator replacement with an Energy Star appliance. The measures eligible for funding will be determined by a full energy audit of the residence. Based on the results of the audit, customers are placed into a tier based on energy usage (Tier 1, which provides up to $600 for energy efficiency services; and Tier 2, which provides up to $4,000 for energy efficiency services, including insulation), allowing high energy users to receive more extensive weatherization measures. WERP and RRP are delivered in coordination with State agencies that administer the state's weatherization programs.

Customers participating in the NES receive a walk-through energy assessment to identify energy efficiency opportunities in the customer's home and a one-on-one education on energy efficiency techniques and measures. Additionally, the customer receives a comprehensive package of energy efficient measures. NES participants may have the measures listed below installed in their home based on the opportunity identified from the energy assessment.

1. Energy Efficient Bulbs - Up to 15 energy efficient bulbs (LEDs) to replace incandescent bulbs.
2. Electric Water Heater Wrap and Insulation for Water Pipes.
3. Electric Water Heater Temperature Check and Adjustment.
4. Water Saving Faucet Aerators - Up to three faucet aerators.
5. Water Saving Showerheads - Up to two showerheads.
6. Wall Plate Thermometer.
7. HVAC Winterization Kits – Up to three kits for wall/window air conditioning units will be provided along with education on the proper use, installation and value of the winterization kit as a method of stopping air infiltration.
8. HVAC Filters - A one-year supply of HVAC filters will be provided along with instructions on the proper method for installing a replacement filter.
9. Air Infiltration Reduction Measures - Weather stripping, door sweeps, caulk, foam sealant and clear patch tape will be installed to reduce or stop air infiltration around doors, windows, attic hatches and plumbing penetrations.

Audience

WERP is available to qualified customers in existing individually-metered, owner-occupied single-family residences, condominiums or manufactured homes.

RRP is available to qualified customers in individually-metered residences irrespective of whether the property owner or the tenant owns the refrigerator.

NES is available to individually-metered residential customers in selected neighborhoods where ~50% of the homeowners have income equal to or less than 200% of the Federal Poverty Guidelines, based on third party and census data.

Income-Qualified Energy Efficiency and Weatherization Assistance Program

B &C. Impacts, Participants and Expenses

Income Qualified Energy Efficiency and Weatherization Assistance[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$3.6	$2.8	77%
Program Cost	$10.1	$5.5	54%
MW	1.0	0.8	75%
MWH	5,309.9	4,951.9	93%
Units	10,538	11,726	111%

1) Values are reflected at the system level.

2) Numbers rounded.

D. Qualitative Analysis

Highlights

Neighborhood Energy Saver: After receiving regulatory approval from both the North Carolina Utilities Commission and the South Carolina Public Service Commission in the fall of 2012, the Program was officially launched by the Company in March 2013. The yearly goal is to serve a minimum of 8,926 households. Honeywell Building Solutions was awarded the contract to administer the Program through a competitive bid process.

In 2017, NES offered free walk-through energy assessments to 9 qualifying neighborhoods in NC - Charlotte, Lincolnton, Walnut Cove, Greensboro, High Point, Spencer, Kannapolis, Robbinsville, and Winston-Salem and 3 qualifying neighborhoods in SC - Pendleton, Inman and Walhalla, serving a total of 11,095 customers. Neighborhood events have included support from community groups and speakers such as elected officials, community leaders and community action agency representatives.

Starting April 2017, the program has fully transitioned from CFLs to LEDs.

Weatherization: The Company launched WERP and RRP in February 2015 in North Carolina and South Carolina. The Company selected the program administrator, North Carolina Community Action Agency (NCCAA), in December 2014 via a request for proposal. The company is working with the NC and SC Weatherization Agencies to deliver this program.

In 2017, 559 homes received weatherization in conjunction with the DOE weatherization program, with 151 refrigerators replaced, 49 Tier 1 services provided and 443 Tier 2 services provided.

E. Marketing Strategy

Neighborhood Energy Saver: NES continues to target neighborhoods with a significant low-income customer base using a grassroots marketing approach to interact on an individual customer basis to gain trust. Participation is driven through a neighborhood kick-off event that includes trusted community leaders and local and state officials explaining the benefits of the Program. The purpose of the kick-off event is to rally the neighborhood around energy efficiency and to educate customers on methods to lower their energy bills. Customers have the option to make an appointment for an energy assessment at the time of the event.

Weatherization: WERP and RRP plan to piggy-back the marketing efforts of the current state Weatherization Assistance Programs administered by the state weatherization service providers. Additionally, agencies may utilize referrals generated from other Company energy efficiency programs as well as from their existing pool of weatherization applicants.

In addition to the kick-off event, the Company plans to use the following avenues to inform eligible customers about the Program:

- Direct mail (letters and reminder post cards)
- Door hangers
- Press releases and/or neighborhood flyers
- Community presentations and partnerships
- Inclusion in community publications such as newsletters, etc.

F. Evaluation, Measurement and Verification

The process and impact evaluation report for the Neighborhood Energy Saver portion of the Program is scheduled for completed in second quarter of 2019 upon the program's transition to LEDs.

Low Income Weatherization Program participation began in August 2015. Evaluation plans include a billing analysis to determine Impacts and a process evaluation to assess program operations and potential opportunity areas. Activities for the impact and process evaluation began in early 2016. The evaluation report deliverable date is now planned for the first quarter of 2018.

Multi-Family Energy Efficiency Program

A. Description

The Multi-Family Energy Efficiency program ("Program") provides energy efficient lighting and water measures to reduce energy usage in eligible multi-family properties. The Program allows Duke Energy Carolinas, LLC (the "Company") to utilize an alternative delivery channel which targets multi-family apartment complexes. The measures are installed in permanent fixtures by Franklin Energy the program administrator or the property management staff. Franklin Energy is in charge of all aspects of the Program which include outreach, direct installations and customer care.

The Program helps property managers save energy by offering energy efficient lighting and water products. The program offers LEDs including A-Line, Globes and Candelabra bulbs and energy efficient water measures such as bath and kitchen faucet aerators, water saving showerheads and pipe wrap. Water measures are available to eligible customers with electric water heating. These measures assist with reducing maintenance costs while improving tenant satisfaction by lowering energy bills.

The Program offers a direct install ("DI") option service by Franklin Energy. However, property managers still have the option for their property maintenance crews to complete the installations, upon request. The lighting measures and water measures are installed during scheduled direct install visits by Franklin Energy crews or routine maintenance visits by property personnel. In the case of direct installs, crews carry tablets to keep track of what is installed in each apartment. In the case of DIY installations, the property maintenance crew tracks the number of measures installed and reports them back to Franklin Energy. Franklin Energy then validates this information and submits the results to the Company.

After installations are completed, Quality Assurance ("QA") inspections are conducted on 20 percent of properties that completed installations in a given month. The QA inspections are conducted by an independent third party.

Audience

The target audience is property managers who have properties that consist of four or more units and are served on an individually metered residential rate schedule. In order to receive water measures, apartments must have electric water heating.

Properties that have already been served by the Property Manager CFL program are only eligible for water measures. However, properties with CFL installations over 5 years old are eligible for the new LEDs and water measures.

B &C. Impacts, Participants and Expenses

Multi-Family Energy Efficiency[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	**$9.2**	**$13.3**	**145%**
Program Cost	**$2.4**	**$3.2**	**131%**
MW	**1.2**	**1.9**	**161%**
MWH	**12,687.5**	**19,056.2**	**150%**
Units	**186,948**	**356,003**	**190%**

1) Values are reflected at the system level.

2) Numbers rounded.

D. Qualitative Analysis

Highlights

In 2017, the Program completed installations at 221 properties, accounting for close to 23,800 units. The Program installed 356,003 measures with lighting measures representing 67 percent and water measures representing 33 percent. The Program successfully transitioned to LEDs in 2017 and the new LED measures have been well received by both tenants and property owners.

Issues

There are no issues to report at this time.

Potential Changes

In 2018, the Program will consider additional LED bulbs to serve track and recessed lighting fixtures. Additionally, the Program plans to file to remove the 4 conjoined unit requirement from the Multi-family program tariff so that all units within a complex can be served.

E. Marketing Strategy

As program implementer, Franklin Energy is responsible for marketing and outreach to property managers. This is primarily done through outbound calls and on-site visits to understand initial interest in the program from property managers in the Company's service territory. The Program also utilizes local apartment association memberships to obtain access to contact information for local properties and attend association trade shows or events to promote the program. The Program was an exhibitor in the May 2017 AANC Conference in Raleigh, NC and generated over 200 leads for the region.

A Multi-Family Energy Efficiency public website landing page is available for property managers to learn more about the Program. A program brochure and a frequently asked question sheet are available for download.

Other ways a property manager may learn more about this Program is through the MyDuke Portal, an online tool, when they login to pay the bills of vacant units at their property. The MyDuke Portal presents a promo link that directs the user to the Program website for more information. This promo ran several months during 2017 in Duke Energy Carolinas. Additionally, a Social Media campaign ran through May using Facebook ads to target Property Decision Makers and Trade Groups in NC & SC zip codes. Following the campaign, results were positive with solid click thru rates averaging 1.45%, over 150 new Multifamily website page views, call center leads increased and positive customer comments were received on Social Media.

Once enrolled, Franklin Energy provides property managers with a variety of marketing tools to create awareness of the Program to their tenants. These include letters to each tenant informing them of what is being installed and when the installation will take place. Tenants are provided educational leave-behind brochures when the installation is complete. The brochure includes a customer satisfaction survey to return to Duke Energy to provide valuable program feedback. An online version is also available.

At the conclusion of the installation, window clings are placed in strategic areas throughout the property. Placement of the window clings at a minimum will be at the common areas entry and each residential building on site (to the extent applicable). Using the window cling ensures that the program and Duke Energy are recognized long after the installation has taken place.

Multi-Family Energy Efficiency Program

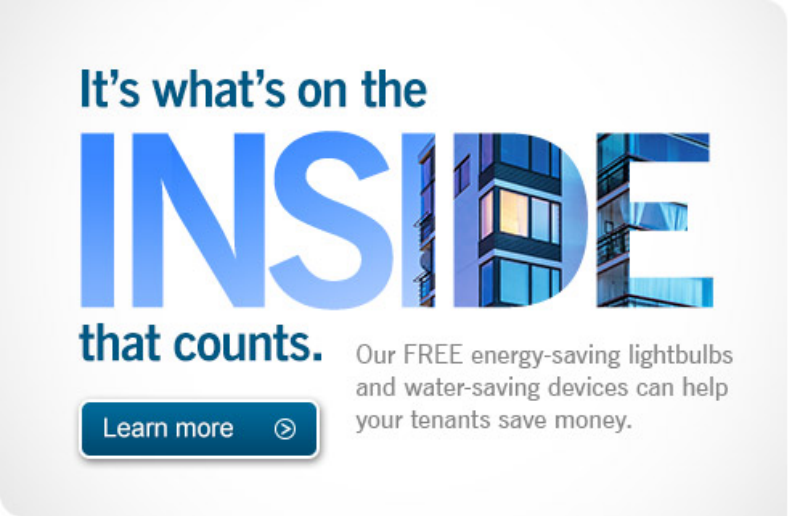
F. Evaluation, Measurement and Verification

No evaluation activity is planned for 2018 at this time.

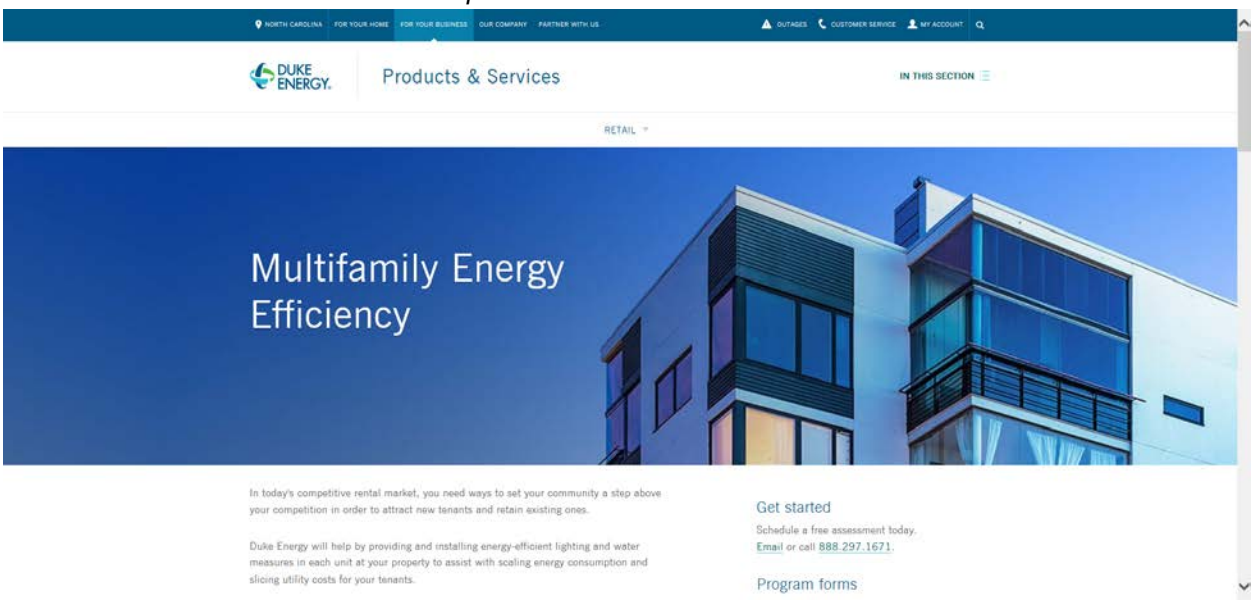
Multi-Family Energy Efficiency Program

Appendix

State Landing Page Promotion (Hero Banner)-
Updated for transition to LEDs



Program Web Page
Updated for transition to LEDs



Multi-Family Energy Efficiency Program

Program Brochure-
Updated for transition to LEDs

Window Cling-
New for 2016

Multi-Family Energy Efficiency Program

Tenat Leave Behind-

Updated for transition to LEDs

Multifamily Energy Efficiency Program

DUKE ENERGY.

Based on an assessment of your unit, these products were selected to offset your monthly energy usage:

Electric

Straight Line, Globe and Candelabra LED Lightbulbs

LEDs last longer and use up to 90 percent less energy than incandescent bulbs.

Water

(Water-saving products are only installed in properties that use electricity to heat water.)

Faucet aerators*

Faucet aerators installed in the kitchen and bathroom use up to 55 percent less water than standard faucet aerators.

Black handle allows for adjustable flow

Showerhead*

An energy-efficient 1.5-gpm showerhead will use less water than a regular showerhead, which means you can also use less energy to heat the water.

Adjustable flow

Pipe wrap*

Hot water pipe wrap reduces water and energy use by preventing heat loss while hot water travels through the pipes.

*Provided only to properties that use electricity to heat water.

For more information, contact the Multifamily Energy Efficiency Program at 888.297.1671 or dukeenergymultifamilyeep@franklinenergy.com. Or, visit duke-energy.com/multifamily.

Note that this program is administered by Franklin Energy, a contractor of Duke Energy with experience in the installation of home energy-saving products.

Customer Survey

Thank you for participating in this program. We'd like to know how we did installing your new energy-saving products. Please complete the below survey and mail it to us. The survey is also available online at duke-energy.com/multifamilysurvey.

Property name:

Address: Unit No.: City: State: ZIP:

Email:

I was notified in advance of this work. ❑ Yes ❑ No

I was at home while the technicians installed the products. ❑ Yes ❑ No

The technicians' ID badges were visible. ❑ Yes ❑ No ❑ N/A

I am interested in receiving additional information on energy efficiency. ❑ Yes ❑ No

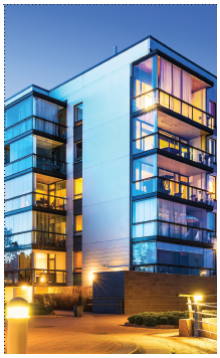
What effect has your participation in the Multifamily Energy Efficiency Program had on your overall satisfaction with Duke Energy? ❑ Positive effect ❑ Negative effect ❑ No effect ❑ Don't know

Using a scale of 1 to 10, please rate your level of agreement with the following statements (circle your response):

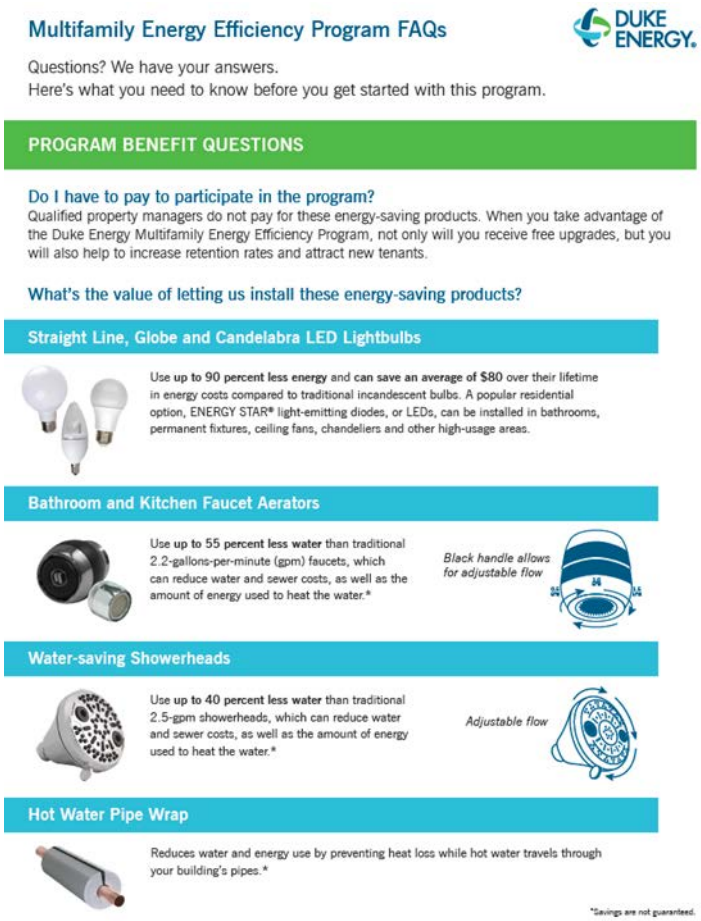
	not at all satisfied									completely satisfied
Overall, I was satisfied with the Duke Energy Multifamily Energy Efficiency Program.	1	2	3	4	5	6	7	8	9	10
The technicians respected my property and left it in good condition.	1	2	3	4	5	6	7	8	9	10
The technicians treated me with courtesy.	1	2	3	4	5	6	7	8	9	10
The technicians were knowledgeable about the products and answered my questions.	1	2	3	4	5	6	7	8	9	10
The leave-behind materials are informative.	1	2	3	4	5	6	7	8	9	10

Comments:

DE_LeaveBehindLW_091316



Multi-Family Energy Efficiency Program



Multifamily Energy Efficiency Program FAQs

DUKE ENERGY.

Questions? We have your answers.
Here's what you need to know before you get started with this program.

PROGRAM BENEFIT QUESTIONS

Do I have to pay to participate in the program?
Qualified property managers do not pay for these energy-saving products. When you take advantage of the Duke Energy Multifamily Energy Efficiency Program, not only will you receive free upgrades, but you will also help to increase retention rates and attract new tenants.

What's the value of letting us install these energy-saving products?

Straight Line, Globe and Candelabra LED Lightbulbs

Use **up to 90 percent less energy** and **can save an average of $80** over their lifetime in energy costs compared to traditional incandescent bulbs. A popular residential option, ENERGY STAR® light-emitting diodes, or LEDs, can be installed in bathrooms, permanent fixtures, ceiling fans, chandeliers and other high-usage areas.

Bathroom and Kitchen Faucet Aerators

Use **up to 55 percent less water** than traditional 2.2-gallons-per-minute (gpm) faucets, which can reduce water and sewer costs, as well as the amount of energy used to heat the water.*

Black handle allows for adjustable flow

Water-saving Showerheads

Use **up to 40 percent less water** than traditional 2.5-gpm showerheads, which can reduce water and sewer costs, as well as the amount of energy used to heat the water.*

Adjustable flow

Hot Water Pipe Wrap

Reduces water and energy use by preventing heat loss while hot water travels through your building's pipes.*

*Savings are not guaranteed.

Social Media ad for Property Managers

My Home Energy Report

A. Description

The My Home Energy Report ("MyHER" or the "Program"), is a periodic comparative usage report that compares a customer's energy use to similar residences in the same geographical area based upon the age, size and heating source of the home. Energy saving recommendations are included in the report to encourage energy saving behavior.

The reports are distributed up to 12 times per year (delivery may be interrupted during the off-peak energy usage months in the fall and spring). The report delivers energy savings by encouraging customers to alter their energy use. Customer's usage is compared to the average home (top 50 percent) in their area as well as the efficient home (top 25 percent). Suggested energy efficiency improvements, given the usage profile for that home, are also provided. In addition, measure-specific offers, rebates or audit follow-ups from other Company offered programs are offered to customers, based on the customer's energy profile. As of December 31, 2017, almost 1.2 million DEC customers were actively receiving the MyHER report.

In 2015, The Company developed an interactive online portal to enhance the MyHER program. The portal allows customers to further engage and learn more about their energy use and opportunities to reduce their usage. Customers are able to set goals, track their progress to goal, and receive more targeted tips. As of December 31, 2017, there were just shy of 27,000 single family customers and almost 1400 multifamily customers enrolled on the portal. In June 2016, the company also began sending out electronic versions of the MyHER to these customers enrolled on the portal. In addition, now all MyHER customers with an email address on file with the Company receive an electronic version of their report monthly.

Audience

Target customers reside in individually-metered, single-family and multifamily residences with an active account and concurrent service from Duke Energy Carolinas, LLC (the "Company"). Multifamily residences with a registered email address with the Company receive 4 printed reports and 8 electronic reports. Multifamily residences without a registered email address with the Company receive 6 printed report a year with a strong call to action to provide their email address to receive more report via email.

B & C. Impacts, Participants and Expenses (will you be showing separate participation numbers for Single Family and Multifamily?

My Home Energy Report[1]

$ in millions, rounded[3]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	**$17.3**	**$21.7**	**126%**
Program Cost	**$11.8**	**$13.8**	**117%**
MW	**57.0**	**79.1**	**139%**
MWH[2]	**211,047.5**	**311,368.9**	**148%**
Units	**1,050,000**	**1,394,693**	**133%**

1) Values are reflected at the system level.
2) Units represents the average monthly participation.
3) Numbers rounded.

D. Qualitative Analysis

As customers receive subsequent reports, their engagement increases as they learn more about their specific energy use and how they compare to their peer group. The report then provides customers tools to reduce their usage in the form of targeted energy efficiency tips that provide customers with actionable ideas to help them

become more efficient. Program participants are encouraged to contact the Company with their questions, comments and report corrections. Report corrections continue to generate the largest number of inquiries. Customers wishing to be removed from the Program represent less than one tenth of one percent of Program participants.

Highlights

The paper and electronic versions of MyHER received a fairly significant facelift that began arriving in customer homes in September 2017. The report now provides customers a view of their forecasted disaggregated usage so they will know where to focus their savings efforts. The report is also more crisp and streamlined with visuals added for all actions and tips.

E. Marketing Strategy

Marketing for the Program consists of proactive communication through distribution of reports supported by a program website featuring additional information on the reports, Frequently Asked Questions ("FAQs") and contact resources. The MyHER Interactive portal is marketed by email campaigns as well as in the printed report.

F. Evaluation, Measurement and Verification

The next process and impact evaluation report is scheduled for completion in the first quarter of 2019.

Residential –Smart $aver® Energy Efficiency Program

A. Description

The Residential – Smart $aver® Energy Efficiency Program ("Program") offers measures that allow eligible Duke Energy Carolinas, LLC (the "Company") customers to take action and reduce energy consumption in the their home, including direct action against the home's single-largest user. The Program offering provides incentives for the purchase and installation of eligible central air conditioner or heat pump replacements in addition to Quality Installations and Wi-Fi enabled Smart Thermostats when installed and programmed at the time of installation of the heating ventilation and air conditioning (HVAC) system . Program participants may also receive an incentive for , attic insulation/air sealing, duct sealing, variable speed pool pumps, and heat pump water heaters..

Program staff is responsible for establishing relationships with HVAC and home performance contractors ("Trade Allies") who interface directly with residential customers. These Trade Allies market and leverage the Program to assist with selling these products and services to customers. Once the Trade Ally has sold the service/product, they adhere to Program requirements for completion and submit incentive applications on behalf of the customer. An incentive is disbursed to the customer and/or Trade Ally after the application has been approved and processed.

Duke Energy contracts with a third party vendor who is responsible for application processing, incentive payment disbursement, and Trade Ally and customer call processing.

Audience

The Company's residential customers that meet the eligibility requirements of the Program.

B &C. Impacts, Participants and Expenses

Residential – Smart $aver Energy Efficiency Program[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$0.0	$8.9	-
Program Cost	$0.0	$7.4	-
MW	0.0	2.5	-
MWH	0.0	8,545.6	-
Units	0	27,311	-

1) Values are reflected at the system level.

2) Numbers rounded.

D. Qualitative Analysis

Highlights

The Company's newly modified tiered incentive structure continues to continues to receive a positive reaction from customers as well as Trade Allies. Reporting continues to show that the increased incentive amounts for higher SEER equipment has encouraged customers to install higher efficiency equipment as well as having it properly installed and managed with new technologies.

The Referral Channel which provides free, trusted referrals to customers who are trying to find reliable qualified contractors for their energy saving home improvement needs has successfully generated roughly 10,0005,902 customer referrals throughout 2017. Customers who's referral generated a sale by the Trade Ally were triggered a star rating survey to rate their experience with using a referred contractor.

The Referral Network maintained a 4.68 out of 5 star rating during 2017 and looks to continue improving that score. throughout 2018..

Issues

The buy-in and participation of the Trade Ally network is vital to the success of the Program. The Program continues to transform the market; shifting market practices away from some of the more commonly utilized practices which rely heavily on decentralized training and varying knowledge levels, as well as imprecise and manual field calculations, towards industry trained and certified trade allies using higher quality diagnostic instruments and processes. The Company has continued to struggle to gain contractor acceptance with diagnostic based measures due to the required diagnostic equipment purchases, obtaining additional industry certifications and altering current business practices. The program will continue to place emphasis on these best practices and continue offering additional training to the Trade Allies to build support.

- **Marketing Strategy**

Promotion of the Program is primarily targeted to HVAC and home performance contractors as well as pool and plumbing contractors that provide installation opportunities for variable speed pumps and heat pump water heater technology. . Trade Allies are important to the Program's success because they interface with the customer during the decision-making event, which does not occur often for most customers.

Program information and Trade Ally enrollment links are available on the Program's website to educate customer about the Program and encourage participation. By increasing the overall awareness of the Program and the participation of Trade Allies, it ensures more customers are discussing the benefits of the Program at time of purchase.

The Program implemented several customer marketing campaigns during 2017 which leveraged channels such as bill inserts and email messaging to build awareness of the program. Other channels such as a paid search and co-branded special offer campaigns with eligible Trade Allies were also utilized to create awareness for the program as well as a reduction to the incremental cost associated with the purchase of a higher efficient product/service.

- **Evaluation, Measurement and Verification**

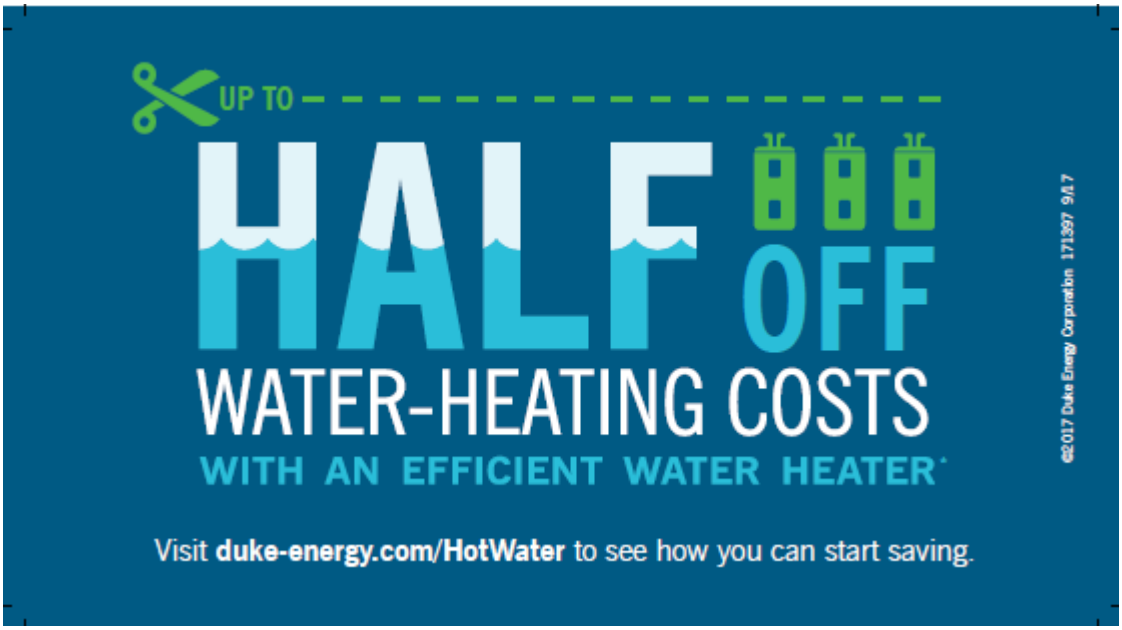
Evaluation activity is underway for this Program with the process and impact evaluation report scheduled for completion in first quarter of 2018..

The impact evaluation will consist of engineering estimates with sampled on-site measurement and verification. Participant surveys will be used to assess the level of free ridership and spillover to determine net savings.

On the process side, participant surveys and trade ally surveys, will help gauge program processes and identify needed improvements.

- **Appendix**

Residential HVAC – Bill Insert



Did you know?
Water heaters are the **second-highest source of energy usage** in most homes.

Heat pump water heaters can help you save energy and money every day, plus you can get a $350 rebate when you install an ENERGY STAR® model.

But wait … there are more reasons to upgrade:

- Save $250 each year – or more – on your water-heating costs.
- Easy operation and consistent temperature.
- Long lifespans of up to 13 years and low maintenance.

To learn more or find a participating contractor, check out **duke-energy.com/HotWater.**

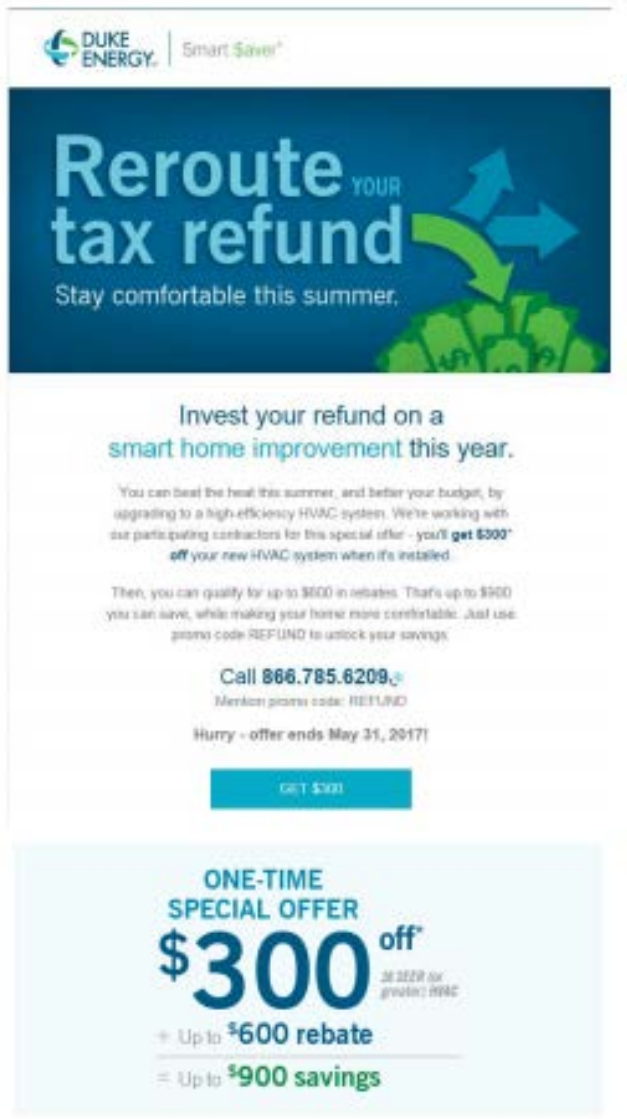
Must be a single-family household. Additional restrictions may apply.

** Department of Energy: Heat pump water heaters provide savings of nearly 55% compared to typical electric water heaters.*

DUKE ENERGY. | Smart $aver®

30827-I-0151

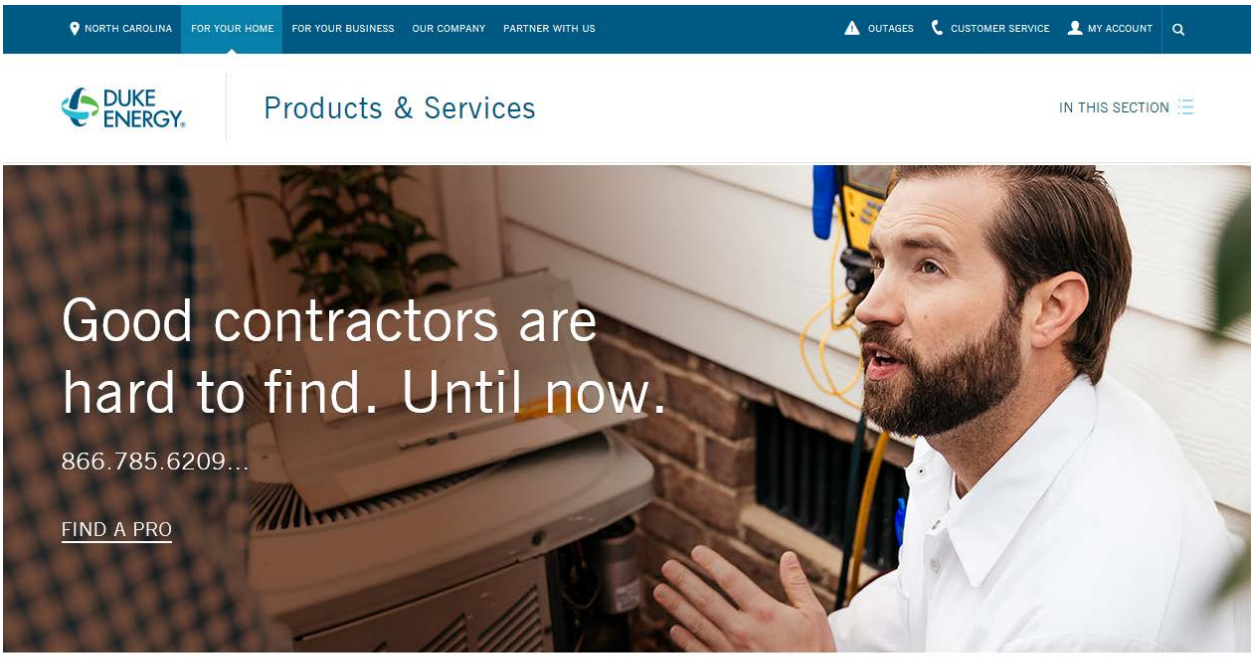
Residential HVAC – Referral Special Offer Campaigns



Residential –Smart $aver® Energy Efficiency Program

ST24A | 400 South Tryon Street
Charlotte, NC 28202

Residential HVAC Referral Web Landing Page



Find a reputable home improvement professional

When you need to find a reputable pro, the last thing you want is to waste time and money looking for the right one. That's why we've created our FREE referral network. Whether you're looking to improve your HVAC system, insulation, or plumbing and electrical needs, we take the stress out of finding a great pro.

Residential HVAC Referral Social Ad

Residential –Smart $aver® Energy Efficiency Program

Business Energy Report

A. Description

The Business Energy Report ("BER" or the "Program"), is a periodic comparative usage report that compares a customer's energy use to their peer groups. Comparative groups are identified based on the customer's energy use, type of business, operating hours, square footage, geographic location, weather data and heating/cooling sources. Pilot participants will receive targeted energy efficiency tips in their report informing them of actionable ideas to reduce their energy consumption. The recommendations may include information about other Company offered energy efficiency programs. Participants will receive at least six reports over the course of a year.

Audience

This Pilot was offered to approximately 13,000 customers served on an eligible Duke Energy Carolinas, LLC (the "Company") non-residential rate schedule who are not opted out of the EE portion of the Rider and have at least 12 months of electric usage with the Company. Initial program participants were automatically enrolled in the Program. Program participants could request their removal from the Program at any time.

B & C. Impacts, Participants and Expenses

Business Energy Report[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$0.3	$0.0	0%
Program Cost	$0.2	$0.1	81%
MW	0.4	0.0	1%
MWH	5,663.0	42.4	1%
Units[3]	15,634	109	1%

1) Values are reflected at the system level.

2) Numbers rounded.

3) Program terminated, with final reports mailed in April 2017. MW, MWH and Units reflect average capability and average monthly participation for January through April 2017.

D. Qualitative Analysis

As customers receive subsequent reports, their engagement increases as they learn more about their specific energy use and how they compare to their peer group. The report then provides customers tools to reduce their usage in the form of targeted energy efficiency tips that provide customers with actionable ideas to help them become more efficient. Customers were also encouraged to register for BER Interactive, an online portal that offered additional tips and information on their energy usage. Program participants were encouraged to contact the Company with their questions, comments and report corrections.

Highlights

The Company mailed letters to pilot participants on December 30, 2015 welcoming them to the program. Customers were provided a form and a business reply envelope to update information about the business such as business type, operating hours, square footage, own/lease, heating/cooling information, and a contact name. After providing customers an opportunity to respond, the first report was mailed to customers on February 17, 2016. A customer satisfaction online survey was conducted in October 2016.

The survey was sent to 3,448 treatment group DEC customers and 3,914 control group DEC customers. There was a 4% response rate from both the treatment and control group, with a total of 130 completed surveys received from the treatment group and 167 received from the control group. Key findings indicate that 43% of DEC BER participants recalled receiving the reports. Overall, 73% of BER participants were satisfied with the reports. Customers liked the reports because they found them informative and it helped them manage their usage.

In the course of the Company's efforts to effectively manage the Pilot, concerns have arisen regarding the long term outlook of the Pilot and its ability to be commercialized. First, the preliminary internal energy savings analysis performed by the Company lead it to question the Pilot's ability to achieve the assumed energy savings associated with the program which casts significant doubt as to the Pilot's ongoing cost-effectiveness. Second, the BER program team became aware of future viability issues related to the vendor currently administering the Pilot. In light of these issues and in order to minimize the costs borne by our customers, the Company terminated the Pilot offering effective August 31st 2017.

E. Marketing Strategy

The Company communicated information about the Pilot via the customized proactive reports distributed through, but not limited to, direct mail.

F. Evaluation, Measurement and Verification

There was no further evaluation activity for the Program due to termination of the pilot program

Non-Residential Smart $aver® Custom Assessment

A. Description

Duke Energy Carolinas, LLC's (the "Company's") Non-Residential Smart $aver® Custom Assessment (the "Program") offers financial assistance to qualifying commercial, industrial, and institutional customers to help fund an energy assessment, retro-commissioning design assistance in order to identify energy efficiency conservation measures of an existing or new building(s) or system. The detailed study and subsequent list of suggested energy efficiency measures will reduce energy costs with the intent of also helping customers to utilize the Non-Residential Smart $aver® Custom and/or Prescriptive Programs. The deliverable of the Program is a detailed energy report that includes the above as well as the technical data needed for the Non-Residential Smart $aver® Custom and/or Prescriptive Program and to provide assistance with the Non-Residential Smart $aver® Application. All kWh and kW savings identified from measures implemented as a result of the pre-qualified assessments are solely counted to the Program.

The program was expanded in 2015 to include new construction design assistance. Design assistance assists customers with new construction, major renovations, and additions by providing design assistance to help enable construction beyond the applicable state energy code. Design assistance includes a number of benefits: 1) professional engineering and design resources, 2) computer simulated energy modeling to develop multiple energy efficiency design options providing each customer design choices 3) final computer simulated energy model with selected design, 4) support for application of Non-Residential Smart $aver® Custom and/or Prescriptive Incentives.
The intent of the Program is to encourage the implementation of energy efficiency projects that would not otherwise be completed without the Company's technical and financial assistance. The Program's application requires pre-qualification for eligibility. Currently, all assessments and design assistance are performed by professional engineering firms that have been pre-selected and contracted by the Company. The current engineering firms include: APTIM. and ThermalTech Engineering, Inc., Each offers a diversified set of skills that allow all qualifying commercial, industrial, and institutional customers to be supported.

The program was modified in 2017. The above contracted professional engineering companies are still be utilized for assessments if the customer chooses to select this resource option. Additionally, the Program allows customers to seek third party engineering assistance of their own selection and receive the same financial assistance. Pre-established criteria needs to be met for the funds to be released in order that the Program maintains its high engineering standards and quality of work. By allowing flexibility and choice, the expectation is for the Program's participation to increase.

Audience

Pre-qualified non-residential electric customers, except those that choose to opt-out of the Program, are eligible.

B & C. Impacts, Participants and Expenses

Non Residential Smart Saver Custom Technical Assessments[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$7.1	$10.2	144%
Program Cost	$3.3	$2.1	65%
MW	1.5	1.6	106%
MWH	13,280.9	15,633.2	118%
Units	10,760	6	0%

1) Values are reflected at the system level.

2) Numbers rounded.

D. Qualitative Analysis

Highlights

Non-Residential Smart $aver® Custom Assessment

Customers continue to show interest in the Program. Through Q4 2017, 14 new customers are participating the Program with 6 other considering participation. Over 50 percent of the customers that receive assessments implement the energy efficiency projects. Lack of capital is the primary reason for not moving forward with projects. In addition, if the energy efficiency measures identified do not meet the internal financial criteria needed for a capital project.

The Company has delivered over 15,000 MWh through Q4 2017.

E. Marketing Strategy

The marketing strategy for the Program is to work with those customers that need technical and financial assistance as a companion to their internal resources. Given the facility-wide approach, many of the energy savings opportunities are complex and interactive in nature which fits well with the end-to-end involvement utilized in the Program. Typical customer marketing activity involves direct marketing from assigned Account Managers, electronic postcards, e-mails, and information attained through the Company's website, and direct customer inquiries. Marketing was expanded in 2017 to include professional engineering trade allies as their services to customers may be able to be funded through the Program.

F. Evaluation Measurement and Verification

A process and impact evaluation report for Smart $aver custom assessment measures evaluation was completed in second quarter of 2017.

Samples of participants were selected for the process and impact studies. For the impact evaluation, some blend of selective monitoring and site visits was performed at a sample of facilities, with engineering-based estimation. Evaluation analysis also included identification of spillover impacts from the process of engaging customers in the energy assessment. Participant surveys were collected to estimate net impacts and for the process evaluation.

The verified results include a gross realization of 84% for energy (kWh) and 85% and 86% for Summer and Winter demand (kW), respectively. Free ridership was estimated at 3%, spillover at 9%, for a net to gross of 106%.

Non-Residential Smart $aver® Custom

A. Description

Duke Energy Carolinas, LLC's (the "Company's") Non-Residential Smart $aver® Custom Incentives (the "Program") offers financial assistance to qualifying commercial, industrial and institutional customers (that have not opted-out) to enhance their ability to adopt and install cost-effective electrical energy efficiency projects.

The Program is designed to meet the needs of the Company's customers with electrical energy saving projects involving more complicated or alternative technologies, or those measures not covered by the Non-Residential Smart $aver Prescriptive Program. The intent of the Program is to encourage the implementation of energy efficiency projects that would not otherwise be completed without the Company's technical or financial assistance.

Unlike the Non-Residential Smart $aver Prescriptive Program, the Program requires pre-approval prior to the project initiation. Proposed energy efficiency measures may be eligible for customer incentives if they clearly reduce electrical consumption and/or demand.

The two approaches for applying for incentives for this Program are Classic Custom and Custom-to-Go. The difference between the two approaches focuses on the method by which energy savings are calculated. The documents required as part of the application process vary slightly.

Currently the applications forms listed below are located on the Company's website under the Smart $aver® Incentives (Business and Large Business tabs).

- Custom Application, offered in word and pdf format.
- Energy savings calculation support:
    - Classic Custom excel spreadsheet approach (> 700,000 kWh or no applicable Custom-to-Go calculator)
        - Lighting worksheet (excel)
        - Variable Speed Drive (VFD) worksheet (excel)
        - Compressed Air worksheet (excel)
        - Energy Management System (EMS) worksheet (excel)
        - General worksheet (excel), to be used for projects not addressed by or not easily submitted using one of the other worksheets
    - Custom-to-Go Calculator approach (< 700,000 kWh and applicable Custom-to-Go calculator)
        - HVAC & Energy Management Systems
        - Lighting
        - Process VFDs
        - Compressed Air

The Company contracts with AESC to perform technical review of applications. All other program implementation and analysis is performed by Duke Energy employees or direct contractors.

Audience

All of the Company's non-residential electric accounts billed on eligible rate schedules, except those that choose to opt-out of the Program, are eligible.

B & C. Impacts, Participants and Expenses

Non-Residential Smart $aver® Custom

Non Residential Smart Saver Custom[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$52.6	$35.8	68%
Program Cost	$14.0	$7.3	52%
MW	10.3	6.2	60%
MWH	90,102.0	41,833.3	46%
Units	73,002	40,134	55%

1) Values are reflected at the system level.

2) Numbers rounded.

D. Qualitative Analysis

Highlights

Customers continue to identify energy efficiency offers eligible under this Program. An average of 23 new pre-approval applications per month were received in 2017. The custom program continues to see a large number of small projects and a very small number of large projects from our customers resulting in an overall decrease in kWh savings.

Smart $aver Custom Incentives program uses a flat rate incentive. The current flat rate incentives allows the customer to receive an incentive for both energy and demand savings.

Efforts to educate trade allies and vendors who sell energy efficient equipment have been very successful. In many cases, vendors will submit the paperwork for the customer which eliminates a barrier for customers that do not have the resources to devote to completing the application.

The Program launched a fast track option for 2017 which gives customers the ability pay a fee to speed up their application processing time to seven business days. This fee is passed through to the vendor for their cost in expediting the application. In 2017 the Program received 24 Fast Track applications.

The Program also helped launch a complementary program, Smart $aver Performance Incentives, which will allow customers to apply for projects which are not suitable for Smart $aver Custom. Smart $aver Performance Incentives is filed as a unique program but will initially be implemented in conjunction with Smart $aver Custom to reduce confusion for customers and Trade Allies.

Issues

The Program application process is considered burdensome by some customers due to the individual and technically intensive review required for all projects applying for a custom incentive. Each year the program spends time working on the reduction of the application length. The program has reduced average processing time to under 20 days for all states/jurisdictions by streamlining processes.

The technical review often requires customers (or their vendor) to quantify the projected energy savings from the proposed project. This can be a lengthy process that may require some level of engineering expertise. Where necessary, this requirement will continue, thus ensuring that incentives are being paid for cost-effective verifiable efficiency gains. Indications are that the Custom-to-Go suite and online application portal have relieved some of this burden.

The custom program is subject to large fluctuations in performance due to the importance of a small number of large projects. There are a significant amount of small projects compared to the small number of large projects which can drive the majority of annual impacts.

The custom program is still limited by customers who are opted-out of the EE Rider. Those customers who are opted-out are not eligible to participate and any projects completed for those customers would be considered lost opportunities. The custom program is actively working with internal resources (large account managers and business energy advisors) to see if opting-in to the EE Rider for a potential project is the best option for those customers currently opted-out.

Finally, the custom program continues to see changes in available technologies as specific measures become eligible for Smart $aver Prescriptive.

Potential Changes

The Custom program continues to evaluate additional improvements to enhance participation, processing speed and program efficiency.

E. Marketing Strategy

The Company will continue the Program marketing efforts in 2017 through various marketing channels that include but are not limited to:

- Direct mail (letters and postcards to qualifying customers)
- Duke Energy Progress website
- Community outreach events
- Small Business Group outreach events
- Paid advertising/mass media
- Social media promotions
- Trade ally outreach
- Account managers
- Segmentation managers

These marketing efforts are designed to create customer awareness of the Program, to educate customers on energy saving opportunities and to emphasize the convenience of Program participation.

Non-residential customers are informed of programs via targeted marketing material and communications. Information about incentives is also distributed to trade allies, who in turn sell equipment and services to all sizes of nonresidential customers. Large business or assigned accounts are targeted primarily through assigned Company account managers. Unassigned small to medium business customers are supported by the Company's business energy advisors. The business energy advisors follow up on customer leads to assist with program questions and steer customers to the trade ally search tool who are not already working with a trade ally. In addition, the business energy advisors are contacting customers with electrical costs between $60,000 and $250,000 to promote the Energy Efficiency for Business program.

The internal marketing channel is comprised of assigned Large Business Account Managers and Local Government and Community Relations who all identify potential opportunities as well as distribute program collateral and informational material to customers and trade allies. In addition, the Economic and Business Development groups also provide a channel to customers who are new to the service territory.

The Program launched a new marketing channel in 2017 called New Construction Energy Efficiency Design Assistance (NCEEDA) to help identify energy efficiency projects for customers currently

underserved in the SMB market. This channel will utilize the vendor Weidt Group to help identify those opportunities, complete savings calculations as well as submit applications for the customer. As of January 20, 2018, 79 projects have been enrolled in the DEC - NCEEDA offering representing nine million square feet of floor area, with 32 Smart $aver Custom project applications submitted representing 11.8 million kWh of energy savings. .

F. Evaluation, Measurement and Verification

Currently, evaluation work is underway on the Smart $aver custom measures. The impact and process report is scheduled to be completed in the third quarter of 2018.

For the impact evaluation, some blend of selective monitoring and site visits is planned to be performed at a sample of facilities, with engineering-based estimates and participant billing analysis conducted by the evaluator. Participant surveys will be conducted to collect information needed to estimate net impacts for the process evaluation and to assess satisfaction with the program.

Non-Residential Smart $aver Prescriptive

A. Description

The Non-Residential Smart $aver® Prescriptive Program ("Program") provides incentives to Duke Energy Carolinas, LLC's (the "Company's") commercial and industrial customers to install high efficiency equipment in applications involving new construction and retrofits and to replace failed equipment. The program also uses incentives to encourage maintenance of existing equipment in order to reduce energy usage. Incentives are provided based on the Company's cost effectiveness modeling to assure cost effectiveness over the life of the measure.

Commercial and industrial customers can have significant energy consumption but may lack knowledge and understanding of the benefits of high efficiency alternatives. The Program provides financial incentives to help reduce the cost differential between standard and high efficiency equipment, offer a quicker return on investment, save money on customers' utility bills that can be reinvested in their business, and foster a cleaner environment. In addition, the Program encourages dealers and distributors (or market providers) to stock and provide these high efficiency alternatives to meet increased demand for the products.

The Program promotes prescriptive incentives for the following technologies – lighting, HVAC, pumps, variable frequency drives, food services, process and information technology equipment.

Audience

All of the Company's non-residential opt-in customers billed on an eligible Duke Energy Carolinas rate schedule

B & C. Impacts, Participants and Expenses

Non Residential Smart Saver Prescriptive[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$56.4	$201.0	357%
Program Cost	$16.5	$69.3	420%
MW	15.3	34.8	228%
MWH	87,299.0	239,420.5	274%
Units	381,368	5,322,620	1396%

1) Values are reflected at the system level.

2) Numbers rounded.

D. Qualitative Analysis

Highlights

The Program has developed multiple approaches to reaching the very broad and diverse audience of business customers. This consists of incentive payment applications, with paper and online options, and instant incentives offered through the midstream marketing channel and the Online Energy Savings Store. The 2017 growth over 2016 was strong due to several key factors:

- Customers showed high interest in energy efficiency and had significant funds to invest in efficiency along with the requested rebates which offset a portion of the cost. The program saw the following increases in 2017 incentive payments over 2016:
  - HVAC 5% increase
  - Lighting 69% increase
  - Pumps and motors 24% increase
  - Process equipment 71% increase
  - Foodservice and IT equipment declined
- More applicants are using the online application, an easier way to apply
- Midstream marketing channel continued to attract more distributors to the program

[1] The information reflects results for the Non-Residential Smart $aver Prescriptive program in aggregate. Reference the Appendix for results by technology.

Non-Residential Smart $aver Prescriptive

- Outreach continued to support Trade Allies working with the program
- Targeted marketing reached out to customers and Trade Allies
- High levels of customer service were provided by a dedicated team of representatives answering customer questions via phone and email
- Large account management and business energy advisors continue to provide large and medium businesses with personalized relationships to identify and support new EE projects

Customers have several options to participate in the Program. The following chart summarizes 2017 participating customers by Program channel:

Program Option	Participating Customers*	% 2017 Repeat Customer
Paper and Online Application Form	3,895	63%
Midstream Marketing Channel	2,293	67%
Online Energy Savings Store	560	38%

*May include multiple facilities/sites for one customer.

PAPER AND ONLINE APPLICATIONS

During 2017, 6,174 applications, consisting of 14,405 measures, were paid for Duke Energy Carolinas prescriptive incentives. New application activity during this period was 31% higher than in 2016. During 2017, 46% of applications were submitted via the new online application portal. Similar application increases have been seen in Duke Energy's other jurisdictions. Much of this increase has been attributed to the continued interest in high efficiency LED lighting measures. The average payment per paid application was $5,477.

Many Trade Allies participating in the application process reduce the customer's invoice by the amount of the Smart $aver® Prescriptive incentive and then receive reimbursement from Duke Energy. Customers often prefer this rather than paying the full equipment cost upfront and receiving an incentive check from Duke Energy. More information is provided on the next page, as to how the Program engages with Trade Allies.

Duke Energy utilizes an internal database that allows the Program to self-administer Program applications and track program data.

MIDSTREAM MARKETING CHANNEL

The midstream marketing channel provides instant incentives to eligible customers at a participating distributor's point of purchase. Approved midstream distributors validate eligible customers and selected lighting, HVAC, food service and IT products through an online portal, and use that information to show customers the incentive-reduced price of high efficiency equipment. Upon purchase, the distributor reduces the customer's invoice for eligible equipment by the amount of the Smart $aver® Prescriptive incentive. Distributors then provide the sales information to Duke Energy electronically for reimbursement. The incentives offered through the midstream channel are consistent with current program incentive levels.

In 2016, Duke Energy launched major improvements to this marketing channel by partnering with the third-party Energy Solutions. Energy Solutions provides the online portal for distributors to manage the paperless validation and incentive application, which is expected to help this channel grow significantly. During 2017, approximately 56% of the Smart $aver impacts were from participation through the midstream marketing channel. Duke Energy currently has 205 distributors signed up for the midstream channel. Duke Energy continues to work to add more well-known distributors to this channel. Duke Energy expects this channel to continue increasing participation in the Smart $aver Prescriptive program.

ONLINE ENERGY SAVINGS STORE

Duke Energy also offers the Business Savings Store on the Duke Energy website, with orders fulfilled by the third-party EFI. The site provides customers the opportunity to take advantage of a limited number of incentive measures by purchasing qualified products from an on-line store and receiving an instant incentive that reduces the purchase price of the product. The incentives offered in the store are consistent with current program incentive levels.

TRADE ALLY MANAGEMENT

Over the years, the Program has worked closely with Trade Allies (TA) to promote the program to our business customers at the critical point in time when customers are considering standard or high efficiency equipment options. Currently, there are 2,044 energy-efficiency equipment vendors, contractors, engineers, architects and energy services providers who are based in the Carolinas and registered as a TA with the

Non-Residential Smart $aver Prescriptive

Smart $aver® Non-residential programs (prescriptive and custom). The Smart $aver® outreach team builds and maintains relationships with TAs associated with the technologies in and around Duke Energy's service territory. Existing relationships continue to be cultivated while recruitment of new TAs also remains a focus. Duke Energy's efforts to engage TAs include the following activities:

- Trade Ally Search tool located on the Smart $aver® website
- Inspections of a sample of all projects to ensure quality control
- Trade Ally co-marketing including information about the Smart $aver program in the TA's marketing efforts
- Online application portal training and support
- Midstream channel support
- Trade Ally year-end awards
- Trade Ally newsletter and monthly emails
- Technology- and segment-specific marketing collateral
- Trade Ally discussion group (20 trade allies that give input on program)
- Trade Ally training
- Sponsorship of trade ally events
- Online collateral toolkit for access to marketing materials

The TA outreach team educates TAs on the program rules and the Smart $aver Program expectations for TA conduct.

The Company continues to look for ways to engage the TAs in promotion of the Program as well as more effective targeting of TAs based on market opportunities.

Issues

Feedback from participating customers and Trade Allies is positive overall, and also provides some insight into the barriers to participating in the program. Less than 5% of surveyed customers report dissatisfaction with the program. Reasons include unhappiness with the 90 day time limit to submit an application, communications issues, and changes to eligible products (due to a change in what qualifies for a qualified products list that the program references for eligibility). Less than 10% of surveyed Trade Allies report dissatisfaction with the program, with the most frequent reasons offered that applications are too complex and incentive payment too slow. In response, the program continues to work to improve communications, application forms and processing, as well as promote channels that do not require complex paperwork and offer faster incentive payment. Some TAs feel competition with the vendor implementing Small Business Energy Saver, which is not intended in the programs' designs. Duke Energy also continues to reach out to those customers who have not yet participated in the Smart $aver® program.

Recently, the combination of the Program's incentives and the dropping cost of LED equipment has been very attractive for customers and many have taken advantage of the opportunity to invest in LED upgrades. While there is still significant opportunity for high efficiency lighting, the excitement around LEDs has taken customers' attention away from EE opportunities outside of lighting. The Program has continued to promote non-lighting EE, and encourage customers to go beyond lighting for efficiency. The Company continues to work with outside consultants and internal resources to develop strategies to understand equipment supply/value chains and increase awareness of these measures going forward.

Potential Changes

Standards continue to change and new more efficient technologies continue to emerge in the market. Duke Energy periodically reviews major changes to baselines, standards, and the market for equipment that qualify for existing measures, and explores opportunities to add measures to the approved Program that provide incentives for a broader suite of energy efficient products. This work is underway now, and there are expected to be changes announced for a limited number of new measures and measure updates. These changes are expected to be handled under the flexibility guidelines. For existing measures that are changing, such as a measure removal or reduction to the incentive amount, a 90-day grace period is offered for applications on the past measure and incentive amount to allow customers to apply for incentives on equipment installations that occurred prior to the incentive change.

New measures added include packaged terminal heat pumps, notched v-belts, high efficiency fans for commercial use outside of agricultural sector, residential Energy Star equipment for use in commercial settings (ex: refrigerators, clothes washers and dryers), LED lamp replacements for HID lamps and T5 fluorescent tubes, bi-level stairwell fixtures with integrated sensors, bi-level exterior occupancy sensors and others. The measures passed cost effectiveness tests and were determined to be feasible for offer through the current Prescriptive channels and processes were added as allowed under flexibility guidelines.

Measure removals include high performance and low watt T8 lamps and fixtures, pulse start metal halide, CFL reflector flood lamp, CFL high wattage lamp and CFL specialty lamp measures.

Incentives were reduced for some LED measures, based on updated equipment cost data.

Duke Energy is considering new and innovative ways to reach out to customer segments that have had a lower rate of prescriptive incentive applications, and considering options to partner with other Duke Energy EE programs to cover gaps in the market. In 2017, a new retail marketing channel was tested with the third-party Leidos. Similar to the midstream marketing channel, eligible customers that shop at selected Sam's Club stores located in Duke Energy Carolinas service area may purchase eligible LED lamps at an incentive-reduced price. Leidos provides the sales information to Duke Energy electronically for reimbursement. The test showed minimal results during 2017. The future of this channel is still being reviewed.

Along with the measure updates listed above, the Program is also considering offering new low-cost measures at no out-of-pocket cost to customers. Commission notification will be provided prior to the offering of these future measures.

The Program launched an optional new process for customers to pre-verify equipment eligibility, which is designed to give customers certainty that their selected equipment qualifies for an incentive prior to purchase and will overcome another barrier that can delay investment in EE projects. To date, 70 applications for pre-qualification have been received for customer projects in NC and SC.

E. Marketing Strategy

Nonresidential customers are informed of programs via targeted marketing material and communications. The 2017 marketing plan included direct marketing such as email and direct mail, online marketing (Hero banner), print marketing and supporting partnerships. The marketing team has selected a highlighted topic for each month, and promotes coordinated communication around that topic.

The internal marketing channel is comprised of assigned Large Business Account Managers, small and medium Business Energy Advisors, and Local Government and Community Relations, who all identify potential opportunities as well as distribute program collateral and informational material to customers and Trade Allies. Duke Energy has two business energy advisors in the Carolinas area to perform outreach to unassigned small and medium business customers. The business energy advisors follow up on customer leads to assist with program questions and steer customers to the trade ally search tool who are not already working with a trade ally. In addition, the business energy advisors are contacting customers with revenue between $60,000 and $250,000 to promote the Smart $aver® programs.

In addition, the Economic and Business Development groups also provide a channel to customers who are new to the service territory.

The following chart summarizes the campaigns during the second half of 2017. Example images are found on the following pages.

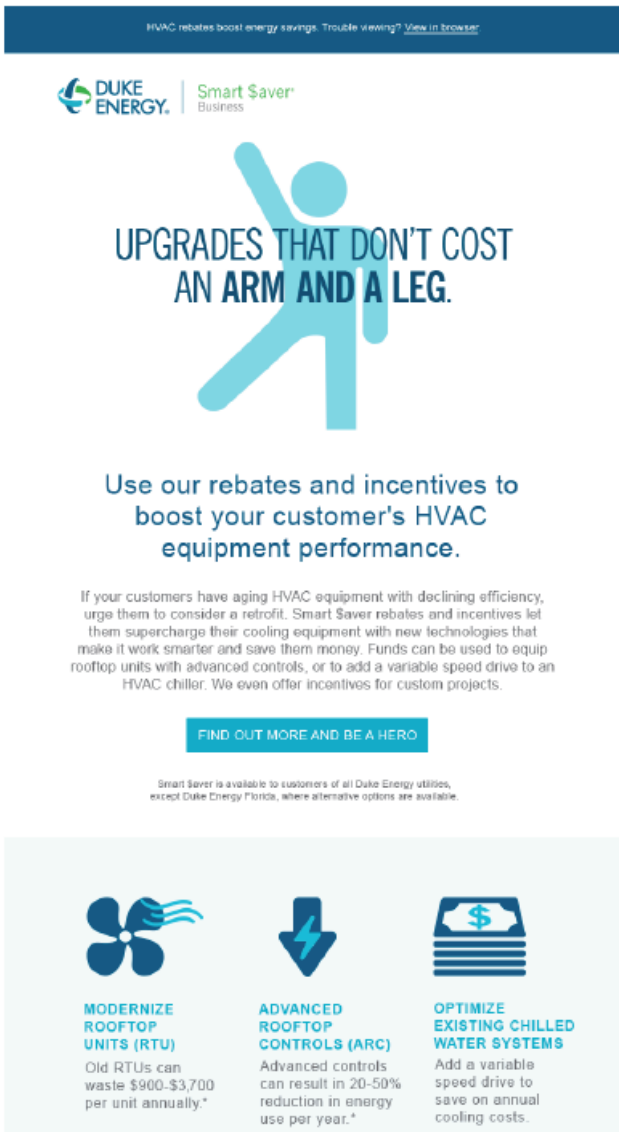
Non-Residential Smart $aver Prescriptive

Month	Channel	Audience	Incentives Highlighted
July	Email, media campaign (digital display, social and preroll video)	Retail, Warehouse, Medical Restaurants, Commercial Real Estate*	ARC and VSD for Chillers
August	Email, media campaign (digital display, social and preroll video)	Data Centers, Commercial Real Estate*	Data Center Cooling
September	All marketing paused while teams responded for storm duty		
October	Email, Direct Mail, media campaign (digital, display, social and preroll video)	Restaurants, Healthcare, Education*	Demand Control Ventilation for Kitchen Exhaust
November	Email, media campaign (digital display, social and preroll video)	All customers*	Prequalification Channel
December	Email, media campaign (digital display, social and preroll video)	Manufacturing, Commercial Real Estate, Education, Water/Wastewater, Government, Retail, Healthcare*	Ductless Mini-splits

* Email also sent to the participating Trade Allies.

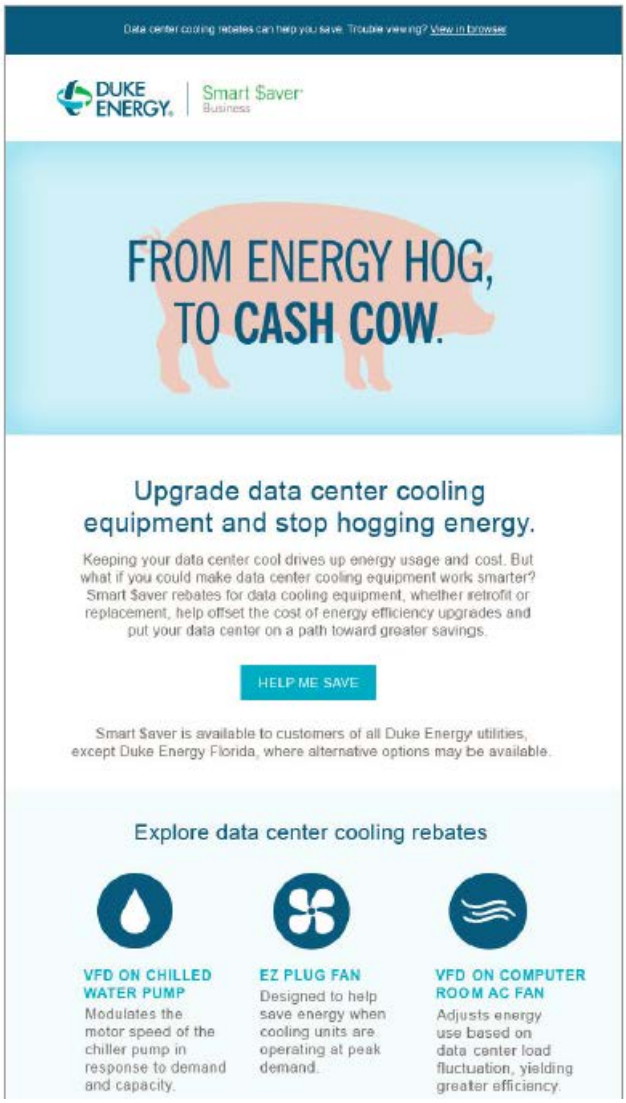
Non-Residential Smart $aver Prescriptive

July ARC and VSD Campaign – Email

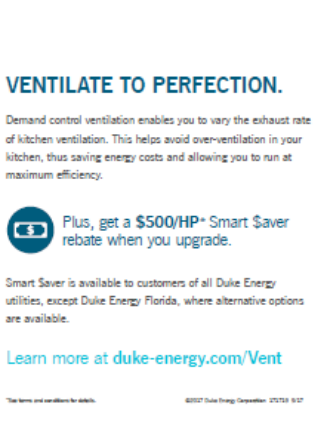


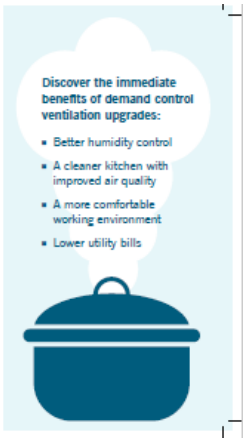
Non-Residential Smart $aver Prescriptive

August Data Center Cooling Campaign – Email



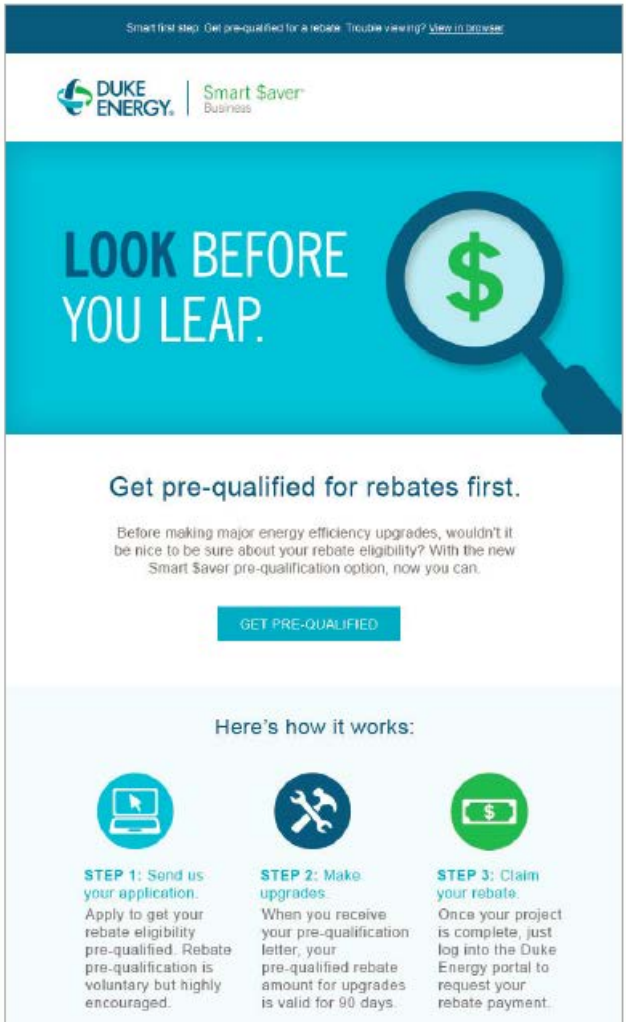
October Demand Control Ventilation Campaign – Email and Direct Mail (DM below)



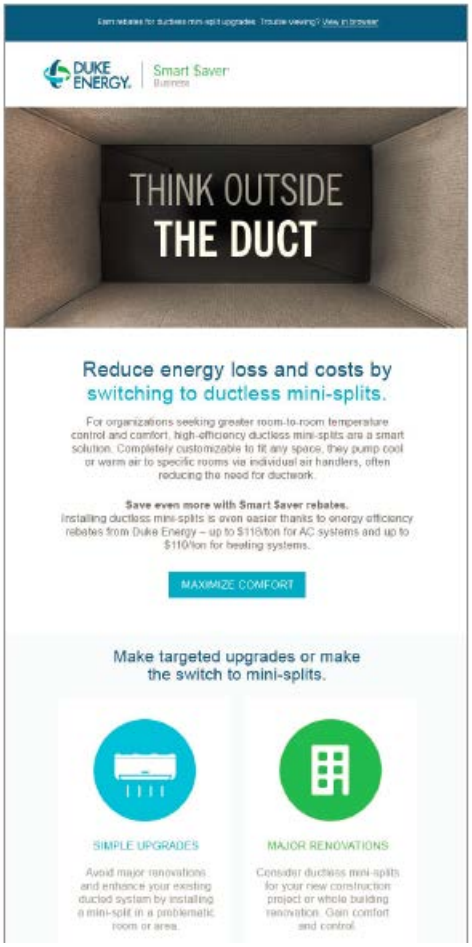


Non-Residential Smart $aver Prescriptive

November Prequalification Campaign – Email



December Ductless Mini-split Campaign – Email



Media Campaign – Retargeting Ads

Media Campaign – Facebook Ad

F. Evaluation, Measurement and Verification

Evaluation work for a process and impact evaluation began the 3rd quarter of 2016, with a combined DEC and DEP final report in the first quarter of 2018.

The process evaluation will include interviews with program management, Trade Allies and customer participants. Customer and Trade Ally interviews will include data collection to gauge customer satisfaction, free-ridership and spillover.

The impact evaluation will consist of estimating annual energy and demand impacts associated with program participation. The primary activity will involve an engineering-based analysis to estimate the impacts of the various program measures. The analysis will be supplemented by on-site field verification of sampled participants, as well as database and deemed savings reviews.

G. Appendix

Non Residential Smart Saver Energy Efficient Food Service Products[1]

$ in millions, rounded	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	**$2.6**	**$1.6**	**61%**
Program Cost	**$0.8**	**$0.3**	**39%**
MW	**0.4**	**0.2**	**54%**
MWH	**3,968.3**	**2,257.3**	**57%**
Units	**5,293**	**2,730**	**52%**

1) Values are reflected at the system level.

2) Numbers rounded.

Non-Residential Smart $aver Prescriptive

Non Residential Smart Saver Energy Efficient HVAC Products[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$7.5	$3.4	45%
Program Cost	$3.3	$1.6	47%
MW	2.8	1.0	37%
MWH	6,253.8	3,382.7	54%
Units	121,841	3,016,407	2476%

1) Values are reflected at the system level.
2) Numbers rounded.

Non Residential Smart Saver Energy Efficient Lighting Products[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$41.4	$193.3	467%
Program Cost	$11.1	$66.7	601%
MW	11.3	33.0	292%
MWH	68,582.5	229,728.9	335%
Units	245,765	2,290,141	932%

1) Values are reflected at the system level.
2) Numbers rounded.

Non Residential Energy Efficient Pumps and Drives Products[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$2.7	$2.2	83%
Program Cost	$0.7	$0.5	71%
MW	0.6	0.5	83%
MWH	4,745.7	3,470.7	73%
Units	4,347	4,361	100%

1) Values are reflected at the system level.
2) Numbers rounded.

Non Residential Energy Efficient ITEE[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$1.4	$0.0	0%
Program Cost	$0.4	$0.1	15%
MW	0.0	0.0	0%
MWH	3,184.7	3.3	0%
Units	2,613	45	2%

1) Values are reflected at the system level.
2) Numbers rounded.

Non-Residential Smart $aver Prescriptive

Non Residential Energy Efficient Process Equipment Products[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	**$0.7**	**$0.4**	**60%**
Program Cost	**$0.1**	**$0.2**	**157%**
MW	**0.1**	**0.1**	**66%**
MWH	**564.1**	**577.6**	**102%**
Units	**1,509**	**8,936**	**592%**

1) Values are reflected at the system level.

2) Numbers rounded.

Non-Residential Smart $aver® Performance Incentive

A. Description

Duke Energy Carolinas, LLC's (the "Company's") Non-Residential Smart $aver® Performance Incentives (the "Program") offers financial assistance to qualifying commercial, industrial and institutional customers (that have not opted-out) to enhance their ability to adopt and install cost-effective electrical energy efficiency projects.

The Program is designed to encourage the installation of new high efficiency equipment in new and existing nonresidential establishments as well as efficiency-related repair activities designed to maintain or enhance efficiency levels in currently installed equipment. The Program provides incentive payments to offset a portion of the higher cost of energy efficient installations that are not eligible under either the Smart $aver® Prescriptive or Custom programs. The types of measures covered by the Program include projects with some combination of unknown building conditions or system constraints, or uncertain operating, occupancy, or production schedules The specific type of measures will be included in the agreement with the Customer. The Program is being delivered in close coordination with the existing Custom program team, and share resources for administrative review and payment processing. The Program requires pre-approval prior to project initiation.

The intent of the Program is to broaden participation in the Company's non-residential efficiency programs by being able to provide incentives for projects that previously were deemed too unpredictable to predictively calculate an acceptably accurate savings amount, and therefore no incentives were offered. It is expected that the program will provide a platform to better understand new technologies.

The key difference between the Performance Incentive Program and the Custom Program is that the Performance Incentive customers will be paid incentives based on actual measure performance. For each project, a plan will be developed to verify actual performance of the project upon completion and will be the basis for the performance portion of the incentive.

The Program incentives will typically be paid out in the following manner:

- Incentive #1: For the portion of savings that are expected to be achieved with a high degree of confidence, an initial incentive will be paid. This incentive is paid once installation is complete.
- Incentive #2: After performance is measured and verified, the performance-based part of the incentive will be paid out as follows:
    - If performance exceeds expectations, the incentive payout may be larger.
    - If performance does not meet expectations, the incentive payout may be smaller.

Application forms for applying for incentives are located on the Company's website.

The Company contracts with Alternative Energy Systems Consulting, Inc. (AESC) to perform technical review of applications. All other program implementation is performed by Duke Energy employees or direct contractors.

Audience

All of the Company's non-residential electric accounts billed on eligible rate schedules, except those that choose to opt-out of the Program, are eligible.

B & C. Impacts, Participants and Expenses

Non-Residential Smart $aver® Performance Incentive

Non Residential Smart Saver Performance Incentive[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	**N/A**	**$0.0**	**-**
Program Cost	**N/A**	**$0.3**	**-**
MW	**N/A**	**0.0**	**-**
MWH	**N/A**	**12.8**	**-**
Units[3]	**N/A**	**19**	**-**

1) Values are reflected at the system level.

2) Numbers rounded.

3) As filed values not included as program was not included in filing.

D. Qualitative Analysis

Highlights

As new technologies are introduced and changes occur in the energy efficiency marketplace, Performance incentives is the perfect tool to influence and reward customers to invest in energy efficiency. The Smart $aver Performance Incentives program was launched on January 1, 2017. Efforts were made to educate internal resources, trade allies and vendors who sell energy efficient equipment, to promote and assist customers to participate in the Program. In addition, the program is being marketed closely with the Smart $aver Custom Program.

Launching of a new program often takes time to create awareness and understanding of the new offering and to identify opportunities. In DEC, the program is beginning to see the fruits of our marketing efforts with an increase in interest and the enrollment of three (3) Performance projects with estimated savings of 7.125 mm kWhrs and several promising projects in the pipeline. With a compelling value proposition and our internal resources and trade allies getting comfortable with this unique program offering. participation should increase significantly.

Issues

Given the infancy of the program, no actual issues have been observed at this time. However, program management is monitoring a few areas of interest.

- The preferred method for measurement and verification of performance is through gathering, monitoring and analyzing customer billing history. However, there may be times when the energy savings are not significant enough to effectively evaluate through the review of billing information. If this is the case, sub-metering will be required at the customer's expense, which may be a hurdle to participate due to the time and expense of monitoring and verifying savings.

- The Performance program cannot be offered to customers who are opted-out of the EE Rider. Performance projects can easily carryover into multiple calendar years because of the monitoring and verification requirement, which could make opting-in more difficult to justify to participate in the Program.

- From a customer's perspective, there is the risk of measured energy savings being less than expected resulting in a smaller incentive payout.

- The Program may be subject to large fluctuations in performance due to long project lead times, long monitoring and verification times, and the timeliness and size of the projects.

Potential Changes

The Company continuously will consider functional enhancements to enhance participation, processing speed and program efficiency.

Beginning in Q4, the Performance team began offering, on a limited basis, until it can be evaluated in action, a software tool that will allow a proactive view of building performance and in turn identify poor performing buildings for energy efficiency programs, such as Performance Incentives/retro-commissioning and energy assessments. This tool should give us an accurate picture of which buildings have the greatest potential for energy savings and where to focus our time and resources to promote the program.

E. Marketing Strategy

The 2017 marketing strategy for the Smart $aver Performance Incentive Program is closely aligned with the Custom Program. The goal is to educate the Company's non-residential customers about the technologies incentivized through both programs, as well as the benefits of installing energy-efficient equipment. These efforts will encompass a multi-channel approach, which will include but not limited to::

- Email (targeted customers)
- Direct Mail (letters to qualified/targeted customers)
- Duke Energy Carolinas website
- Community outreach events
- Print advertising/mass media
- Target customer outreach
- Industry Associations
- Large Account Managers
- Business Energy Advisors
- Trade Ally Outreach

These marketing efforts are designed to create customer awareness of the Program, to educate customers on energy saving opportunities and to emphasize the convenience of Program participation.

Non-residential customers are informed of programs via targeted marketing material and communications. Information about incentives is also distributed to trade allies, who in turn sell equipment and services to all sizes of nonresidential customers. Large business or assigned accounts are targeted primarily through assigned Company account managers. Unassigned small to medium business customers are supported by the Company's business energy advisors. The business energy advisors follow up on customer leads to assist with program questions and steer customers to the trade ally search tool who are not already working with a trade ally. In addition, the business energy advisors are contacting customers with electrical costs between $60,000 and $250,000 to promote the Energy Efficiency for Business program.

The internal marketing channel is comprised of assigned Large Business Account Managers, Business Energy Advisors, and Local Government and Community Relations who all identify potential opportunities as well as distribute program collateral and informational material to customers and trade allies. In addition, the Economic and Business Development groups also provide a channel to customers who are new to the service territory.

Non-Residential Smart $aver® Performance Incentive

F. Evaluation, Measurement and Verification

Due to program launch in January 2017, no evaluation activities are planned in 2018. Future evaluation timing will depend upon sufficient participation.

Small Business Energy Saver

A. Description

The purpose of Duke Energy Carolinas, LLC's (the "Company's" or "DEC") Small Business Energy Saver program (the "Program") is to reduce energy usage through the direct installation of energy efficiency measures within qualifying small non-residential customer facilities. All aspects of the Program are administered by a single Company-authorized vendor. Program measures address major end-uses in lighting, refrigeration, and HVAC applications.

Program participants receive a free, no-obligation energy assessment of their facility followed by a recommendation of energy efficiency measures to be installed in their facility along with the projected energy savings, costs of all materials and installation, and up-front incentive amount from the Company. Upon receiving the results of the energy assessment, if the customer decides to move forward with the proposed energy efficiency project, the customer makes the final determination of which measures will be installed. The energy efficiency measure installation is then scheduled at a convenient time for the customer and the measures are installed by electrical subcontractors of the Company-authorized vendor.

The Program is designed as a pay-for-performance offering, meaning that the Company-authorized vendor administering the Program is only compensated for energy savings produced through the installation of energy efficiency measures.

Audience

The Program is available to existing non-residential customers that are not opted-out of the Company's Energy Efficiency Rider. Program participants must have an average annual demand of 180 kW or less per active account.

B & C. Impacts, Participants and Expenses

Small Business Energy Saver[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$43.9	$69.3	158%
Program Cost	$17.5	$17.4	99%
MW	12.8	19.7	154%
MWH	61,629.0	97,516.7	158%
Units[3]	65,000,000	79,986,749	123%

1) Values are reflected at the system level.

2) Numbers rounded.

3) Units reflect gross kWh.

D. Qualitative Analysis

Highlights

Lime Energy is the Company-authorized vendor administering the Program in both DEC and DEP service areas.

In 2017, the Program remained popular with the Company's small and midsize business customers, with nearly 1,750 Small Business Energy Saver projects completed though year-end in DEC North & South Carolina.

The Company has administered a customer satisfaction survey to Program participants since the Program's launch in DEC. Customers continue to respond very positively to the Program, with 85% of all 2017 survey participants rating their overall satisfaction with the Program experience at an 8 or above (out of a 10 scale). Also, the majority of Program participants continue to respond that the Program has

served to improve their perception of Duke Energy, with 85% of responders indicating that the Program has had a positive effect on their overall satisfaction with the Company.

In order to expand the Program offering to more small and medium business customers who will benefit from the direct install model and turn-key Program process, the Company filed a Program modification proposal in late 2016 with both the NC Utilities Commission and the Public Service Commission of SC to expand Program availability to include all existing non-residential customer accounts with an average annual demand of 180 kW or less, which is an increase from the previous eligibility limit of 100 kW annual average demand per account. This Program expansion modification was approved in October 2016 by both the NCUC and PSC of SC and implemented within the Program shortly thereafter. Customers reacted very positively to this change in 2017, with over 140 projects completed in DEC for 100-180 kW customers.

Issues

While LED lighting measures are expected to remain the primary driver of kWh savings in the Program for the foreseeable future, the Company has been actively working with our vendor Lime Energy to implement initiatives focused on increasing refrigeration and HVAC measure adoption.

The Company began work last year to explore and evaluate potential new HVAC measures to add to the Program, with the goal of offering customers more comprehensive energy efficiency projects. Program management took steps in 2017 to introduce and offer additional HVAC measures, other than system/unit replacements, that are suitable for the small and medium business market, such as HVAC tune-ups, rooftop HVAC unit controls, and HVAC unit optimization devices.

Potential Changes

As the Program matures, the Company will continue to evaluate opportunities to add incentivized measures suitable for the small business market to the approved Program which fit the direct install program model.

Also, the Company is currently evaluating potential changes to the Program incentive design, including exploring the concept of offering higher incentives to deep energy retrofit projects with multiple measure technologies included. Ultimately, the Company would like for the Program to effectively encourage customers to take on more comprehensive energy efficiency upgrades that maximize energy savings.

E. Marketing Strategy

The Program is marketed primarily using the following channels:

- Lime Energy field representatives
- Direct mail (letters and postcards to qualifying customers)
- Duke Energy Carolinas website
- Social media and search engine marketing
- Email & Duke Energy Business E-Newsletters
- Direct marketing & outreach via Program administrator
- Outreach via Duke Energy Business Energy Advisors
- Community events

All marketing efforts are designed to create customer awareness of the Program, to educate customers on energy saving opportunities and to emphasize the convenience of Program participation for the target market.

F. Evaluation, Measurement and Verification

Evaluation activities will begin in the third quarter of 2017 for the next evaluation cycle, with a final report expected in first quarter of 2018. New process evaluation activities will include a customer journey mapping exercise to assess the qualitative experience of the customer, and reveal key information such as loyalty, satisfaction, and frustrations with the program. For the impact evaluation, new activities will include revisiting the sampling methodology based on the current measures mix and customer facility size due to the higher demand consumption cap for participation (180 kW rather than 100 kW).

Program Update:
Effective December 31, 2017 this pilot was closed. A decision was made to proactively close the pilot due to unfavorable EM&V results received for Smart Energy in Offices (SEiO) in the fall of 2017. Energy saving impacts for this pilot were based on SEiO. In addition, at the time of the receipt of the evaluation and the subsequent closure of the pilot no customers were enrolled in the program.

A. Description

The purpose of Duke Energy Carolinas, LLC's (the "Company's) Smart Energy in Offices Program ("Program") is to increase the energy efficiency of program participants. The Program leverages communities to educate and engage building owners, property managers, building operators, tenants and occupants of a building on ways to reduce energy usage in the workplace through simple behavioral changes. This is accomplished by providing participants with detailed information of the account/building's energy usage, support to launch tenant and building operator energy saving campaigns, forums that allow networking and exchange of building operation best management practices, and information showing comparisons between their building's energy performance and others within their community and actionable recommendations to improve their energy performance.

Audience

Non-residential customers with 12 months of usage history with business operations in building with a minimum of 10,000 square feet and 50% of the space dedicated to office space who meet the Program's eligibility requirements.

B & C. Impacts, Participants and Expenses

Smart Energy in Healthcare[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	N/A	$0.0	-
Program Cost	N/A	$0.1	-
MW	N/A	0.0	-
MWH	N/A	0.0	-
Units[3]	N/A	0	-

1) Values are reflected at the system level.
2) Numbers rounded.
3) As filed values not included as program was not included in filing.

D. Qualitative Analysis

A key component of the Program is community engagement from the time of enrollment in the Program and on-going throughout the Program. Program participants identify a single point of contact that is responsible for working with the Company selected vendor's Engagement Managers. This person is responsible for interfacing with Company representatives on all aspects of the Program, including providing assistance to the Company as it relates to coordinating live events, meetings and seminars and assisting with the distribution of Program communication. The customer representative, also referred to as the Coach, is also responsible for dedicating time/resources and implementing the recommendations and guidance provided by the Company. The Coach coordinates with the building operator to carry out building operator campaigns and complete a building profile and benchmark. The Coach also provides the names and contact information for additional customer champions (referred to

as energy captains). The energy captains provide a "grassroots" deployment of energy campaigns to ensure employees are aware and participate in the energy campaigns. In addition, Program participants maintain a high level of engagement with the Company during regular check-ins. The check-in provides the Company and customer an opportunity to discuss campaigns that have been conducted or planned in the near future.

Highlights

The Company received regulatory approval from the Commission to implement the Program in third quarter of 2014.1 Since the Smart Energy in Offices launch on September 3, 2014, about 202 buildings have signed on to participate, representing about 44 customer organizations and over 32 Million Square Feet. SEiO now has active participants in Charlotte Center City, the greater Charlotte area, Greenville, SC, Greensboro, Winston-Salem, and Durham.

# Distinct Coordinating Organizations	# Distinct Duke Energy Customer Names	# Distinct Buildings	# Distinct Duke Energy Accounts	Sum SqFt
44	76	202	242	32,190,166

There has been a significant level of engagement in the building operator campaigns. An Energy Star Portfolio Manager benchmarking score in conjunction with the Smart Energy HQ portal has been generated for 51% of buildings. To date, operator campaigns offered include: Watts With the Weather, Go With the Flow, Clean Sweep, How Low Can You Go, Let It Go, and Wiser Econmizer. 56% of participants have engaged in building operator campaigns. The second Annual Operator forum and awards ceremony was held on May 19, 2016 and was attended by about 38 participants. In the 4th quarter of 2016, 60 minute interval data was made available in the Smart Energy HQ Portal. This new information will be beneficial in creating awareness about spikes in energy usage that are out of the norm, among other things.
Another exciting offering in 2016 was the collaboration with the University of North Carolina-Charlotte (UNCC). Duke has teamed up with Dr. Robert Cox to utilize his fourth year engineering students in his Building Analytics class. These students do a deep dive into program participants building data to look for abnormalities that indicate opportunities for energy efficiency. The students final exam consists of an operational assessment report delivered to the building operator. This has proven to be a highly successful collaboration that has been embraced by many program participants.

Tenant campaigns launched include Add It Up, Butterfly Effect, Occupancy Awareness, and Fall Off. Tenant action campaigns have been completed or initiated in about 66% of buildings. Over 29,623 distinct actions have been recorded in the Smart Energy HQ from campaign participants. The large increase in participation was due in part to the fact that, rather than random campaigns selected by the Coaches, a set schedule of aligned campaigns was initiated in 2016. This made it easier to manage both on the participant and Engagement Manager's sides. It also increased the sense of the community wide competition. In 2016, a mobile device application, the Happen App, was rolled out in order to provide an additional interface for delivering campaign content and energy usage tips. Enhancements to the app, such as Social Sharing, will be introduced in 2017.

[1] The North Carolina Utilities Commission issued an Order in Docket No. E-7, Sub 961 on August 13, 2014 and Public Service Commission of South Carolina issued an Order in Docket No. 2014-253-E- on July 9, 2014 approving the Smart Energy in Offices program.

E. Marketing Strategy

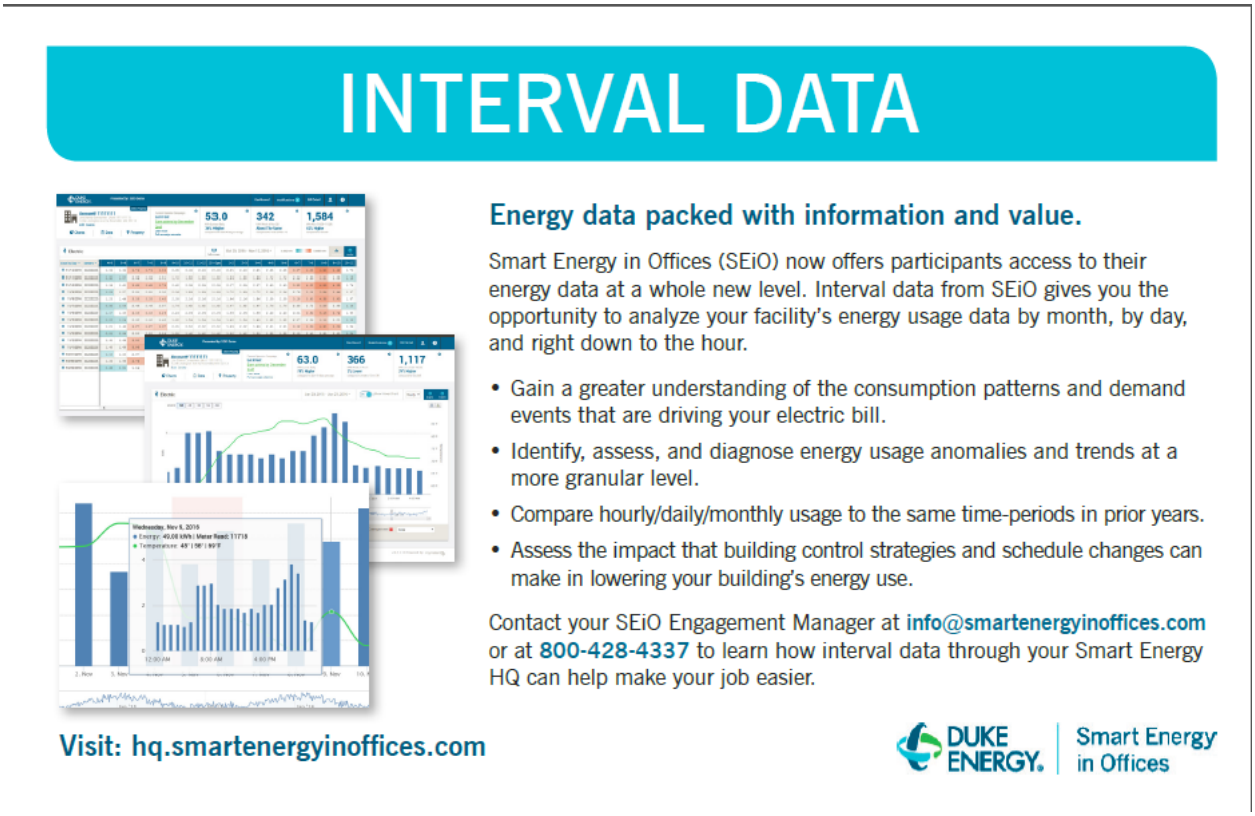
A number of marketing channels have been used including email, print media, social media, videos and presentations at public events. Examples include print ads, popup displays and tables with "spin the wheel" challenges at building sustainability events, per property management requests.. Marketing materials, including a poster with the campaign schedule had been developed for increased participant engagement in tenant and operator campaigns. Additionally, we continue to provide tips on how to reduce wasted energy in the office by utilizing our social media channel Twitter. Online newsletters were distributed to participants in March, June and September. A Smart Energy in Offices testimonial video to drive new enrollment and additional engagement is in the final stages of editing and will be rolled out in early 2017. Two new case studies, highlighting participants success, were created in 2016.

F. Evaluation, Measurement and Verification

Energy impacts for this program were based on the impacts of the Smart Energy in Offices program. In the fourth quarter of 2017 EM&V results for the Smart Energy in Offices program showed less than anticipated impacts. Based on these results, Duke Energy Carolinas, LLC decided to proactively close the Smart Energy in Healthcare pilot. At the time of closure there were no participants enrolled in the program.

G. Appendix

Link to Smart Energy Newsletter Articles



DUKE ENERGY | Smart Energy in Offices

SEiO Successes Case Study

Trinity Partners Ally Center Building

Overview

For Shane Woycik, the Ally Center feels somewhat like his own child. From an engineering perspective, having the privilege of being the building operator since its construction is priceless. As he explained, "You really get to see the structure and you literally know what's behind every wall." This unique perspective combined with a stellar engineering and property management team, as well as an active partnership with Duke Energy's Smart Energy in Offices (SEiO) program, has led to some impressive energy-saving success stories from the Ally Center.

Woycik is a senior chief engineer with Trinity Partners, and the Ally Center in uptown Charlotte is where he spends his days. Prior to joining Trinity Partners, Woycik spent about five years with Jones Lang LaSalle as a building engineer at a Delphi plant in Detroit, Mich. Although buildings up north run primarily on boilers versus the south where heat pumps are more typical, he noted that "all of the systems are ultimately trying to do the same thing, which is keeping the occupants comfortable."

As he focuses on keeping folks comfortable across the Ally Center's 15 floors, Woycik explained that the building has several unique features and benefits. For example, "All of our fan motors run on variable frequency drives (VFDs), which greatly reduces electrical usage. The fact that the building is only 8 years old and is still considered new gives it that advantage, whereas some older buildings have to budget for updates like VFDs," Woycik said. He noted a couple of the main benefits of the VFDs: to control speed better and allow fans to run more smoothly.

Another energy-saving feature at the Ally Center is the lighting; it is modern, with low-wattage lamps. "We even have one tenant with an entire floor full of LED lights," Woycik said, "and we are pushing for all of the can lights to retrofit to LEDs as well."

"Even though the building is only 8 years old and still considered new, there is still room for improvement. Some of the stuff we have discovered was because of SEiO, and we are really glad we participate!"

Shane Woycik, senior chief engineer

Trinity Partners Ally Center Building

Location: 440 S Church St., Charlotte, NC 28202

Campaigns Completed: 12 Operator campaigns

SEiO Awards for 2015/2016:
Diamond Award Winner for Operator Level
Diamond Award Winner for Building Level

ENERGY STAR Score: 92

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SEiO Successes Case Study

Trinity Partners Ally Center Building

Starting with SEiO

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Luckily for Woycik, there was no need to convince Ally Center management – they were immediately on board. The Ally Center even takes the SEiO program a step further by using it to help UNC Charlotte students with real-life work experience in using automation systems to teach and provide on-the-job training for up-and-coming building operators.

SEiO offers both operator- and tenant-focused campaigns and challenges. The former focuses on building systems and controls, and things that operators can do behind the scenes to maximize savings while maintaining optimal system efficiency and occupant comfort. The latter focuses on the building occupants and working with volunteer coaches to encourage and ultimately ask tenants to consider making small changes in their day-to-day life that can add up to a big impact.

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Recognizing the Success

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SEiO Successes Case Study

Tobin Freid, sustainability manager

Sustainability is not just a buzz word for Tobin Freid, it is a passion. And it takes passion in your field to dedicate time and energy toward it, as Freid has done with sustainability over the past 17 years. Eight of those years have been spent sharing her knowledge and passion with the city and county of Durham. Her recent successful involvement in Duke Energy's Smart Energy in Offices (SEiO) program has been a natural progression to help her meet admirable and lofty sustainability goals.

As a sustainability manager, Freid's main focus is to make sure the city and county of Durham's office buildings are running in a manner that satisfies their day-to-day operational needs, without negatively impacting the environment. Beyond that, she aims to make Durham an energy efficiency role model. She continuously seeks to utilize new and creative ways to help Durham "be green." Freid has studied other cities around the country and watched them transform themselves into prime examples of effective, sustainable cities and is excited to be helping Durham reach its sustainability goals.

Freid's proactive and purposeful approach toward energy efficiency naturally led her toward the SEiO program in 2015, which came as a pleasant surprise. She explains, "We had a meeting with Duke Energy to discuss the migration of our energy data into ENERGY STAR® Portfolio Manager® to help track energy efficiency across all of our properties. SEiO was introduced as a complete solution." Freid's interest was instantly piqued. "Smart Energy, what's that?," she said, "and of course I needed to hear more."

Upon learning just a fraction of what SEiO offers at that initial meeting, Freid understood the potential energy efficiency benefits for the buildings across the city and county. As Freid started communicating with the SEiO team, she learned that SEiO is a no-cost, voluntary behavioral-based program that aims to create a new culture concerning energy savings.

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Freid's perseverance made her a natural choice for an energy coach, the liaison between the SEiO program and the participating tenants and employees. While the SEiO team organizes the challenges and provides all of the materials and communications necessary to participate, coaches are the ones to implement the challenges among their tenants, encourage participation and create the buzz amongst their co-workers.

Fried oversaw the implementation of the communitywide challenge, "Add It Up" with the city of Durham in April, 2016. The city responded with the highest participation numbers of any community in the program. She followed suit with Durham county and the "Butterfly Effect" challenge in July, 2016. Again, the Durham community had some of the highest participation overall in the SEiO tenant challenge.

While Freid notes appreciation that the SEiO team provides implementation support and awareness building materials, she recognizes that personalization and customization for her teams would help her make the program more successful. She explains that one of the advantages of being a SEiO energy coach is that each will best understand their own audience, making them the ideal communicators and motivators.

Another key to Freid's success was the use of an incentive. She had an extra stash of LED bulbs on-hand from a prior event, which she used to reward active participants. Freid notes, "People were excited about the bulbs. They are useful and a great reminder of what we're trying to do here."

Tobin Freid insists that being a SEiO energy coach doesn't take much time, and is a fun and easy way to help realize sustainability goals. She concludes, "It's about getting what you give."

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Smart Energy in Offices

Program Update:
Due to the results of the evaluation report delivered in the 4th quarter of 2017, this program is no longer accepting new participants and will close on June 30, 2018. Existing participants will continue to be offered tenant and building challenges (included in the calendar below). In addition, the UNCC Spring 2018 Semester will include student assessments for approximately 25 of our program participant's buildings.

A. Description

The purpose of Duke Energy Carolinas, LLC's (the "Company's) Smart Energy in Offices Program ("Program") is to engage commercial building stakeholders in energy management best practices that address operational and behavioral opportunities to achieve energy savings. The program combines engagement strategies that aim build awareness and drive impact through targeted action campaigns and challenges, with mechanisms to recognize and reward building operators, tenant champions and individual employees stepping up to make a difference in their community.

Audience

Non-residential customers with 12 months of usage history with business operations in a building with a minimum of 10,000 square feet and 50% of the space dedicated to office space who meet the Program's eligibility requirements.

B & C. Impacts, Participants and Expenses

Smart Energy in Offices[1]

$ in millions, rounded[2]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$4.4	$1.1	24%
Program Cost	$1.7	$0.8	45%
MW	8.8	2.1	24%
MWH	42,174.7	10,272.2	24%
Units[3]	48,421,359	26,824,711	55%

1) Values are reflected at the system level.
2) Numbers rounded.
3) Units reflect gross kWh.

D. Qualitative Analysis

The program relies on in-field Engagement Manager resources to guide customers in electing to participate at no additional cost and gain access to the program's resources and staff support. Property and facility managers ("coaches") along with building engineers ("building operators") and tenant champions ("tenants") are provided with orientation training and onboarding to ensure participants can make use of the program's energy use feedback, benchmarking, and employee engagement capabilities. Participants are also equipped with messaging templates and tools to ensure their success in gaining the support of other key building stakeholders and attract a large population of building employee occupants to join the initiative.

Participants benefit from access to an online platform (the "Smart Energy HQ") that provides access to energy use feedback (e.g., monthly billing, interval consumption and demand data) and automates

benchmarking through web services integration with ENERGY STAR Portfolio Manager. Building operators can also access educational content and technical resources as part of a series of operator action campaigns where operators earn points and compete by recording targeted actions addressing various energy efficient maintenance and operations best practices.

The campaigns are promoted throughout the building to draw tenant attention to the behind-the-scenes efforts of facilities staff to be a part of a commitment to save energy. Each campaign is run over the course of several weeks with ongoing messaging and direct outreach from the program Engagement Manager. Many of the campaigns guide operators in analyzing interval data usage profiles and investigating building automation settings and schedules to optimize building systems performance. Additional building operator engagement comes in the form of semi-annual operator forums where building engineers gather with their peers to share their experiences and highlight success stories. Finally, an equipment lending library serves to provide access to sensors, data loggers and imaging cameras with associated software to gain additional insights.

In addition to focus on building operations and maintenance, the program aims to raise awareness among the broader tenant employee population that has significant control over the lighting and plug load end uses that can account for more than half of all electricity use in commercial office buildings. With community-wide challenges where buildings earn recognition and compete with other buildings in the communities, individuals are encouraged to join the initiative by pledging their support, characterizing their individual workstation energy use profile and recording simple energy-saving behaviors. Some building energy challenges invite participants to help their co-workers address energy waste in the office and give individuals the chance to take accountability for shared energy end uses (e.g., common area light switches, networked printers, etc.).

Tenant challenge participation, along with benchmarking performance improvement, and operator campaign participation determine the annual awards (e.g., bronze, silver, gold, diamond) given to participating buildings.

Highlights

The Company received regulatory approval from the Commission to implement the Program in the third quarter of 2014.[1] Since the Smart Energy in Offices launch on September 3, 2014, the program has grown to include more than 190 participating buildings across 41 organizations and over 31 Million Square Feet. SEiO now has active participants in Charlotte Center City, the greater Charlotte area, Greenville, SC, Greensboro, Winston-Salem, and Durham.

# Distinct Coordinating Organizations	# Distinct Duke Energy Customer Names	# Distinct Buildings	# Distinct Duke Energy Accounts	Total Floor Area (SqFt)
44	76	202	242	32,190,166

[1] The North Carolina Utilities Commission issued an Order in Docket No. E-7, Sub 961 on August 13, 2014 and Public Service Commission of South Carolina issued an Order in Docket No. 2014-253-E- on July 9, 2014 approving the Smart Energy in Offices program.

Engagement is most significant in the building operator campaigns. An ENERGY STAR Portfolio Manager benchmarking score in conjunction with the Smart Energy HQ portal has been generated for 62% of buildings. For the 2016-2017 program year,, operator campaigns offered included: Where You at Thermostat, Watts with the Weather, Go with the Flow, Clean Sweep, How Low Can You Go, Let It Go, Wiser Economizer, Invader Crusader, Elevate Your Game and All About that BAS. On average, close to one in three buildings had engaged in each of the building operator campaigns during the current campaign cycle. The second Annual Operator forum and awards ceremony was held on June 6, 2017 and was attended by about 35 participants.

A relationship between SEiO and the University of North Carolina Charlotte (UNCC) was initiated in 2015 via Envision Charlotte's partnership with UNCC enabled by a grant from the US Department of Energy (DOE). Using the DOE-generated processes and tools, UNCC developed an advisory service designed to help those in the commercial real estate field to identify energy savings opportunities. Given the commonality of the goals between the Envision Charlotte/UNCC initiative and SEiO, in the spring of 2016, SEiO launched its partnership with UNCC as well. This partnership continues to be highly beneficial to both UNCC students and to participating SEiO building operators. Through the partnership, SEiO leverages UNCC's manpower and objectivity to perform detailed assessments that most operators do not have the time to perform. Meanwhile, UNCC students receive the opportunity to gain real world experience in downtown Charlotte office buildings. An overview of the deliverables and activities resulting from the SEiO/UNCC partnership are summarized below.

UNCC Student Assessment:

- A team of students is brought into participating building(s) to perform an initial walk-through operational assessment
- Students partner/collaborate with the building over the course of a semester and are leveraged to help investigate available data

Participating Building Provides:

- Access/escort for an initial operational assessment
- Access for a brief after-hours visit
- Access to BAS data (if available)

Participating Building Receives:

- High level report on the building's performance and operational savings opportunities based on available data analyses (may include monthly billing or interval usage data)
- Detailed reports for use in key SEIO operator campaigns throughout the year
- Direct assistance with operator campaigns conducted throughout the semester

In addition to the Student Assessments as described above. The collaboration with UNCC faculty has also afforded the SEiO program a wealth of benefits including guidance on and for building operator training, best practice videos and Operator Campaign content

Tenant campaigns launched during the 2016-2017 program year included Add It Up, Butterfly Effect, Occupancy Awareness, Fall Off, Winter Warm Up, Spring in Your Step and Get Started. Tenant action campaigns have been completed or initiated in more than two thirds of participating buildings. Over 30,000 distinct actions have been recorded in the Smart Energy HQ from campaign participants, with more than 14,000 actions recorded from the summer of 2016 to date.

The timeline shown below provides a snapshot of how the operator and tenant engagement campaigns and activities line up in the 2017-2018 program year in order to maximize program awareness and opportunity for total building recognition.

Recently the team has worked closely with the UNC Charlotte faculty and staff to align the HQ tools and operator campaigns with industry-identified best practices for building re-tuning and ongoing commissioning. The team's goal is to allow for participants to access a library of control strategies and interventions organized by building systems and prioritized by the likelihood of applicability, the level of effort to execute, and the magnitude of potential energy savings. The Engagement Manager will work with customers to identify applicable actions to be taken or verified, and support the implementation of these actions with any needed guidance, tools and resources.

E. Marketing Strategy

The Company's vendor, Accelerated Innovations supports the coordination of marketing and engagement efforts with community stakeholders, industry associations, and delivery partner entities. Resulting efforts help Duke Energy commercial-office customers reduce their energy consumption through simple behavioral modification actions.

SEiO leverages a full catalogue of communication mediums (from social and earned media to field exhibits and direct outreach) to engage with and influence targeted customers with both objective and subjective messaging.

Field Engagement:

The SEiO vendor team provides promotional and outreach for the program through the locally placed Engagement team, which is fully supported by additional program management, technical and marketing staff, as well as additional resources, as needed. Field engagement activities include the following:

- **Field visits.** The SEiO engagement team visits both targeted and participating organizations to identify recruitment and engagement opportunities.
- **Association Events and Meetings.** The SEiO team drives awareness among the targeted communities by participating and presenting (when possible) at building association meetings, including, but not limited to IFMA, IREM, GBC, BOMA, etc.
- **Interactive displays.** In an effort to engage participants and in collaboration with participating organizations Coaches, the SEiO team sets up informational, interactive program displays in eligible buildings and distributes program information to building tenants that pass through and interact with the exhibits.
- **Promotional material distribution.** In collaboration with Duke Energy, The SEiO team has produced an expansive and comprehensive portfolio of informational program marketing materials for electronic and direct distribution to potential participants in the field. All materials are produced in accordance with Duke Energy brand guidelines and are reviewed and approved by Duke Energy Corporate Communications prior to release to the public.
- **Exhibits.** SEiO registers for and exhibits frequently throughout the year at both large and small-scale events that are popular with the workforce in the Duke Energy territory. The team distributes low-cost, SEiO branded giveaway items at these occasions, to further promote the program and build awareness.
- **Events.** The SEiO team hosts a number of program events each year, inclusive of the Annual Awards ceremony and specifically targeted events, such as the Coaches Dinner held in March of 2016 and the Semi-Annual Operator's Forums, which take place in spring and fall.

Social media channels:

- **Online marketing - promotional emails.** The SEiO team uses Duke Energy's online email engagement resource platform (SilverPop) to send relevant, personalized, targeted emails to Operators and Coaches to promote campaigns and encourage participation. Additionally, all registered SEiO participants receive an email announcement at the release of each Program newsletter.
- **Facebook, Twitter** Working with Duke Energy Corporate Communications staff, the SEiO team provides a social media calendar to designate specific topics and timelines for posts to Duke Energy's Smart Energy in Offices Twitter Handle as well as Duke Energy's Facebook posts. When special events or program-related activities occur, the SEiO team will report opportunities to tweet or post back to Duke Energy Corporate Communications.

Engagement Portals/Websites:

- **Program Website**. SmartEnergyinOffices.com, the program website, is publicly available and hosted by Duke Energy's contracted firm, Union. The SEiO team collaborates with Union to update website content and produce a quarterly newsletter, inclusive of SEiO engagement news, participant highlights, events, and program updates, which is published on the website. In Q4 2017, Duke Energy anticipates bringing all control of the SmartEnergyinOffices.com website in-house.

- **Smart Energy HQ.** Tenants (users) can connect to the Smart Energy HQ to participate in program challenges by logging in to "MyEnergyChallenge.com." Coaches and Operators can also log in to MyEnergyChallenge.com to participate in campaigns but will primarily access their organizations' energy data, Portfolio Manager accounts and Operator Campaigns via HQ.SmartEnergyinOffices.com.
- **Happen.** As of September, 2016, SEiO participants were able to access the Smart Energy HQ portal and participate in challenges via the Happen community engagement App. Awareness of the availability of the App is promoted through word of mouth from the SEiO engagement team in the field, through additional messaging/verbiage included in already scheduled emails and on the landing page of the Smart Energy HQ.
- **Instructional/Promotional Videos.** Brief, informational promotion videos are used to generate program awareness, highlight program benefits and instruct customers on how to participate. Duke Energy's Corporate Communications produced an animated promotional video which was uploaded to the Smart Energy in Offices website in April, 2016. The SEiO team, in collaboration with Duke Energy Corporate Communications, produced a testimonial video with successful program participants. The testimonial was posted to the SmartEnergyinOffices.com website in Q12017. Building Operations and Maintenance Best Practices videos that correlate to the Operator campaigns are currently being produced and will be provided to the participant customer base in Q4, 2017.

Tactical Materials

The following marketing vehicles and materials have been designed according to the Duke Energy Branding Guidelines and reviewed and approved by Duke Energy's Marketing and Communications team. These materials will be updated and enhanced as needed to support program changes or additions. The SEiO team manages production, delivery and distribution of each tactic and maintains inventories as needed, based on demand.

- **Customized email templates** – created through Duke Energy's trackable online email marketing vendor (SilverPop) for program announcements, promotion, etc.
- **Presentations** – to explain program purpose, approach and availability and provide participation instruction. For display at events, meetings, trainings, etc.
- **Banners** – pop-up banners, exhibit stand tablecloths, display booth signage
- **Posters** – foam-core mounted and digital for print and display at various locations
- **Stickers –** to promote various actions taken and devices adopted
- **Brochures/flyers** – for use as handouts when canvassing, at events, trainings, meetings, exhibits and events, etc.
  - Program overview for Tenants
  - Program overview for Operators
  - Program overview for General Audience
  - Half-pagers for each campaign (double as digital overlays on the HQ)
  - Tenant posters to raise awareness for Operator Campaigns
- **Case Studies** – customer success stories for use in ongoing recruitment efforts
- **Playbooks** – Created for Coaches and Operators
- **Digital overlays** – For instructional purposes within the Smart Energy HQ, to highlight new campaigns, features, etc.
- **Digital signage** – for display in participating building elevators and lobby kiosk

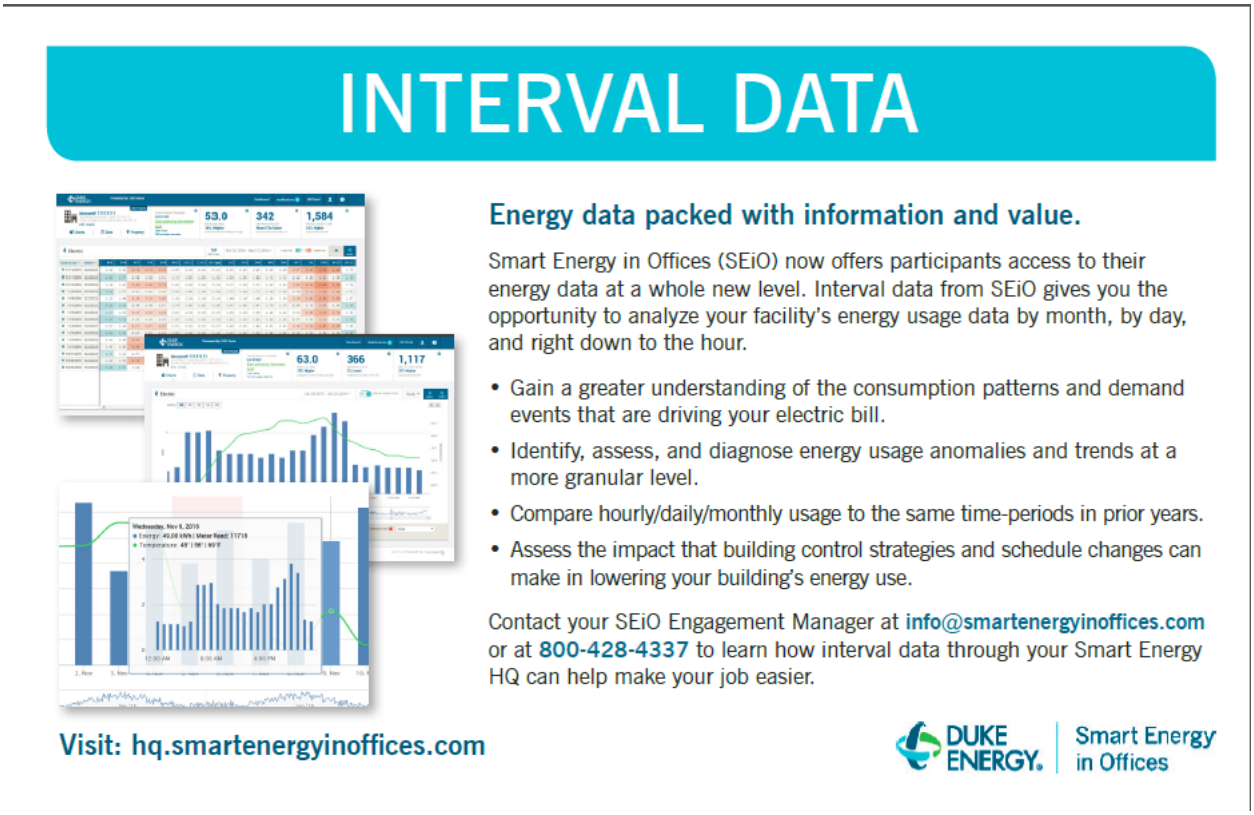
F. Evaluation, Measurement and Verification

The completed evaluation report was finalized in the fourth quarter of 2017. Due to the less than expected results of the EM&V report, we will be shutting down this program as of June 30, 2018.

G. Appendix

Link to Smart Energy Newsletter Articles

Please see the next page for an example of a recent program case study highlighting success with tenant employee engagement.



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SEiO Successes Case Study

Trinity Partners Ally Center Building

Overview

For Shane Woycik, the Ally Center feels somewhat like his own child. From an engineering perspective, having the privilege of being the building operator since its construction is priceless. As he explained, "You really get to see the structure and you literally know what's behind every wall." This unique perspective combined with a stellar engineering and property management team, as well as an active partnership with Duke Energy's Smart Energy in Offices (SEiO) program, has led to some impressive energy-saving success stories from the Ally Center.

Woycik is a senior chief engineer with Trinity Partners, and the Ally Center in uptown Charlotte is where he spends his days. Prior to joining Trinity Partners, Woycik spent about five years with Jones Lang LaSalle as a building engineer at a Delphi plant in Detroit, Mich. Although buildings up north run primarily on boilers versus the south where heat pumps are more typical, he noted that "all of the systems are ultimately trying to do the same thing, which is keeping the occupants comfortable."

As he focuses on keeping folks comfortable across the Ally Center's 15 floors, Woycik explained that the building has several unique features and benefits. For example, "All of our fan motors run on variable frequency drives (VFDs), which greatly reduces electrical usage. The fact that the building is only 8 years old and is still considered new gives it that advantage, whereas some older buildings have to budget for updates like VFDs," Woycik said. He noted a couple of the main benefits of the VFDs: to control speed better and allow fans to run more smoothly.

Another energy-saving feature at the Ally Center is the lighting; it is modern, with low-wattage lamps. "We even have one tenant with an entire floor full of LED lights," Woycik said, "and we are pushing for all of the can lights to retrofit to LEDs as well."

"Even though the building is only 8 years old and still considered new, there is still room for improvement. Some of the stuff we have discovered was because of SEiO, and we are really glad we participate!"

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Despite her already busy workload, Freid's interest in the program and action as a SEiO coach was the driving force behind engaging the city and the county. She prioritized SEiO involvement which helped provide the push Freid needed to get through to the majority and the decision makers. She says, "People can be iffy about joining programs if they don't understand the value, or see an instantaneous benefit. But any lasting behavioral change takes time."

Freid's perseverance made her a natural choice for an energy coach, the liaison between the SEiO program and the participating tenants and employees. While the SEiO team organizes the challenges and provides all of the materials and communications necessary to participate, coaches are the ones to implement the challenges among their tenants, encourage participation and create the buzz amongst their co-workers.

Fried oversaw the implementation of the communitywide challenge, "Add It Up" with the city of Durham in April, 2016. The city responded with the highest participation numbers of any community in the program. She followed suit with Durham county and the "Butterfly Effect" challenge in July, 2016. Again, the Durham community had some of the highest participation overall in the SEiO tenant challenge.

While Freid notes appreciation that the SEiO team provides implementation support and awareness building materials, she recognizes that personalization and customization for her teams would help her make the program more successful. She explains that one of the advantages of being a SEiO energy coach is that each will best understand their own audience, making them the ideal communicators and motivators.

Another key to Freid's success was the use of an incentive. She had an extra stash of LED bulbs on-hand from a prior event, which she used to reward active participants. Freid notes, "People were excited about the bulbs. They are useful and a great reminder of what we're trying to do here."

Tobin Freid insists that being a SEiO energy coach doesn't take much time, and is a fun and easy way to help realize sustainability goals. She concludes, "It's about getting what you give."

For additional information regarding Duke Energy Smart Energy in Offices, visit us at smartenergyinoffices.com or follow us on Twitter @DE_SmartEnergy.

SEiO CITY OF CHARLOTTE CASE STUDY

Motivating Employees and Taking Charge

OVERVIEW

The city of Charlotte and Mecklenburg County have many buildings throughout the region and one office decided to really set themselves apart – by cutting energy use. The Charlotte Mecklenburg Government Center (CMGC) signed up to participate in Duke Energy's Smart Energy in Offices (SEiO) program in 2016.

The CMGC is a 15-story high-rise building located in the government district of uptown Charlotte with approximately 1,100 employees. It houses both the city and county offices, and the city council and county commissioners hold sessions in the building's chamber.

WHAT HAPPENED

Two CMGC employees became involved in SEiO and led their fellow co-workers in tenant challenges. Energy Captains send teammates reminder emails, encourage participation, provide general guidance on how to take part in the challenges and demonstrate how to use the Happen App to record actions. Krystal King, an SEiO Energy Captain, motivated her fellow employees to get involved with SEiO challenges.

Participation and outcomes are reported after employees record their actions online either by using the Happen App or by visiting the website, www.myenergychallenge.com.

SMART ENERGY IN OFFICES AT A GLANCE

SEiO is a program dedicated to helping reduce energy consumption in commercial office buildings. It empowers property managers to educate tenants about simple changes to their daily routine, which can add up to big energy consumption savings. SEiO also provides energy data, tools, education and recognition to building operators to help them increase their buildings' energy efficiency while improving their ENERGY STAR® scores through automated benchmarking.

> "For us, the SEiO energy challenges are a fun way to bring friendly competition to the workplace with the common goal to save energy."
>
> – Amelia Beonde, an SEiO participant

RESULTS

CMGC has become a top-performing office in SEiO's energy-saving challenges. Having motivated Energy Captains and offering an additional special incentive are the key to such remarkable participation. The city of Charlotte management offered a half-day of vacation to the individual with the most SEiO points and a half-day of vacation to the Energy Captain whose floor had the most points.

The results have paid off. During the Fall Off Challenge in the fall of 2016, CMGC was the top-participating building. King and Beonde logged almost 15 percent of the actions reported for the challenge. For the subsequent Winter Warm Up Challenge in early 2017, even more CMGC employees participated. City staff ended up with a clean sweep of the top five participants for overall SEiO challenge participation, and more than 20 percent of the total actions for the Winter Warm Up Challenge were taken by CMGC employees.

"Our floor was probably the most active in challenges because we're a very competitive group, but what was neat to see was how many more people got involved after the first challenge," said Amelia Beonde, an SEiO participant.

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Power Manager®

A. Description

Power Manager® ("Program") is a demand response program that cycles residential central air conditioning to ensure power reliability during high summer peak demand periods. Duke Energy Carolinas, LLC (the "Company") installs a load cycling device near the outdoor unit of a qualifying air conditioner. This enables the customer's air conditioner to be cycled off and on when the Company initiates a control event. During these events, the Company can perform cycling or full shed interruptions of participating customers' air conditioning systems at any time to mitigate capacity constraints in the generation, transmission or distribution systems.

Program participants receive a financial incentive as a bill credit in the amount of $8 per month from July through October ($32 annually).

There is no adverse impact on the customer's air-conditioning system. The load control device has built-in safeguards to prevent the "short cycling" of the air-conditioning system. Cycling simply reduces the amount of time the air-conditioning system runs in a given period. Additionally, the indoor fan will continue to run and circulate air during the cycling event.

Audience

The Program is available to the Company's residential customers residing in owner-occupied, single-family residences with a qualifying central air-conditioning unit.

B & C. Impacts, Participants and Expenses

PowerManager[1]

$ in millions, rounded[4]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$59.7	$61.1	102%
Program Cost	$13.9	$14.0	101%
MW[2]	503.0	501.1	100%
MWH	0.0	N/A	-
Units[3]	473,525	471,780	100%

Notes on Tables:

1) Values are reflected at the system level.

2) MW capability at the generator derived from the average reduction during the June - September control season achieved by a full shed of participating air conditioners. At month-end September 2017, we had the ability to shed 505.9 MW (at the plant), representing 101% of the as filed capability.

3) Units included in filing represented average kW at the meter during the June - September control season. YTD value is based on an average of 252,289 Power Manager devices during the June - September control season.

4) Numbers rounded.

D. Qualitative Analysis

Power Manager was used twice during the summer of 2017. The Company initiated a full shed test event in coordination with Duke Energy Carolinas' System Operations Center to ensure system readiness. On the afternoon of July 13, a Power Manager cycling event was initiated by the System Operations Center to help reduce demand due to a generation site transformer switchyard issue. Although not actually activated, Power Manager was counted as part of the Company's operating reserves on a number of occasions. In this capacity, the available load reduction from Power Manager contributed to the Company's required reserve margin – in effect, Power Manager served as a virtual generation source providing the Company with an effective, economical and environmentally friendly power plant alternative.

E. Marketing Strategy

The Company's success in marketing the Power Manager program continued throughout 2017. Utilizing telephone marketing and a highly successful email offer, Power Manager had a net growth of 19,913 customers (a 10.2% increase); resulting in a total of 257,527 air conditioners on the program by year-end.

The Company also conducted a test of two versions of a direct mail offer mailed to higher propensity customer segments. Each was sent to 24,000 customers in May, resulting in 48,000 offers. Unfortunately, the results were disappointing with slightly over .5% acceptance (255 enrollments), The results support the Company's view that the marketing of this program is better suited to channels that provide more information to customers such as the personal interaction of a telephone offer and the supporting website information linked to an email offer.

In mid-May, Duke Energy Carolinas mailed its annual notification to participating Power Manager customers:

- Reminding them of their participation in the program
- Thanking them for making a difference by being on the program
- Providing information about Power Manager explaining: how it works, its benefits, summer-time tips, and other information

Program information and an enrollment form are available to customers on the Power Manager website located at http://www.duke-energy.com/north-carolina/savings/power-manager.asp.

F. Evaluation, Measurement and Verification

The results of the 2016 evaluation of the program were presented in the July 2017 Collaborative meeting. For this evaluation, data loggers were installed on 144 devices, and spot measurements of voltage, amps, kW, and connected load were conducted at 122 sites. Whole house interval meters were installed at the same households along with the air conditioner end use data loggers. A key objective was to compare the AC end use to whole building demand reductions and assess if customers compensated for air conditioner curtailments. Data from these sources was used to determine the baseline usage on non-event days.

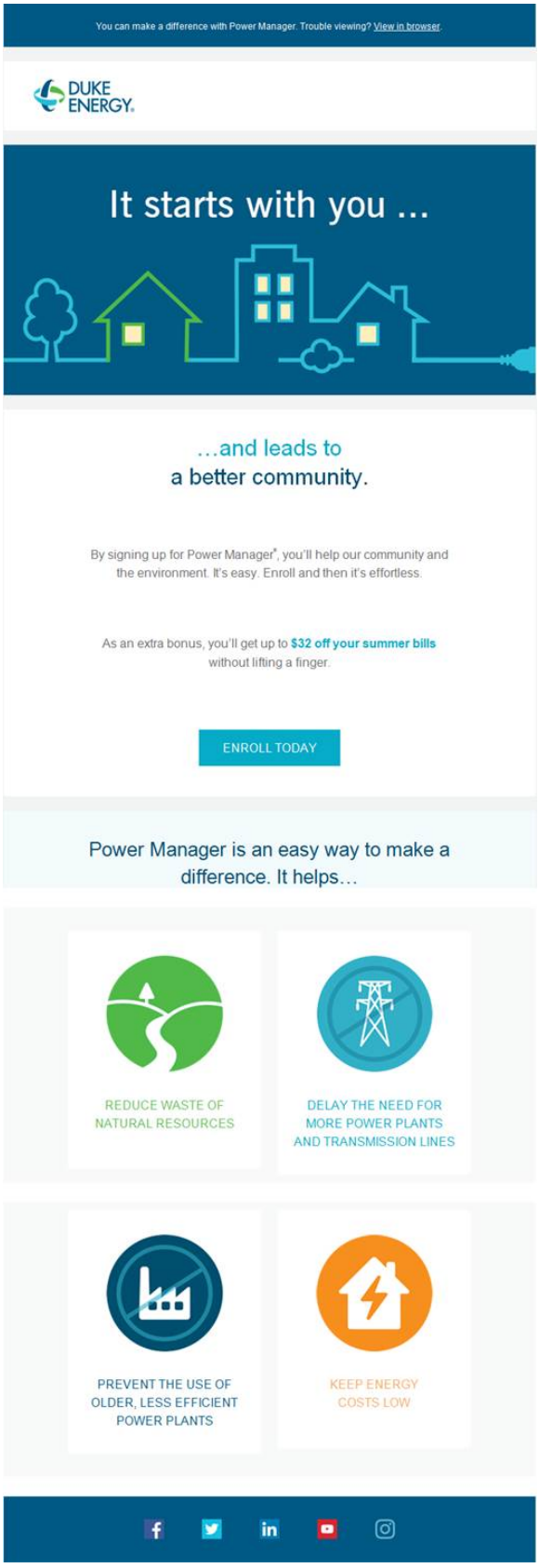
In addition, the process evaluation included a survey of Power Manager participants in the 24 hours immediately following an event, as well as a survey of Power Manager participants on a hot, nonevent day (a control day). By design, the survey mirrored the event day survey and served to establish the baseline response, absent curtailments, for customer responses about comfort, awareness, and other program features. For the process findings, Nexant also interviewed program managers and implementers, and reviewed data files, enrollment, and operation processes.

G. Appendix

Thank You/Reminder Postcard

Power Manager®

Email



Power Manager®

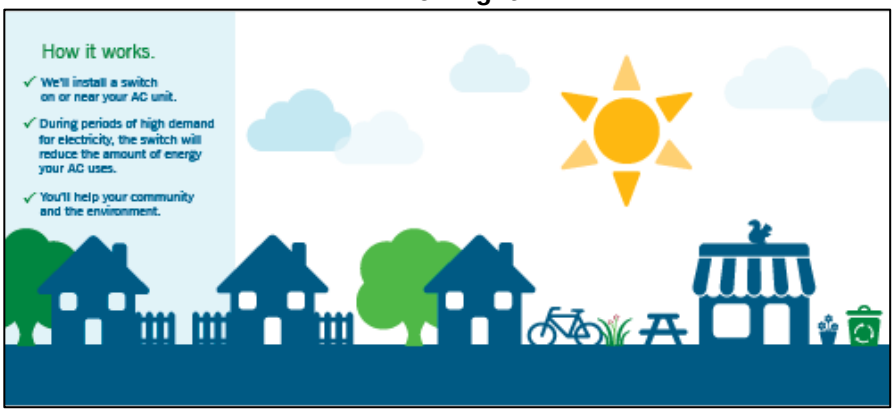
Direct Mail Offer 1

Outer Front

Outer Back

Inner Left

Inner Right



Power Manager®

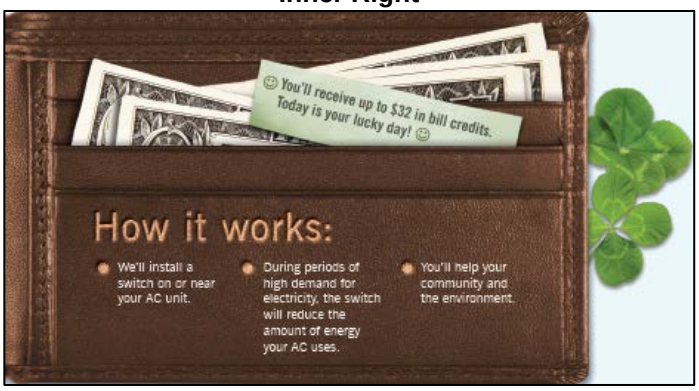
Direct Mail Offer 2

Outer Front

Outer Back

Inner Left

Inner Right



EnergyWise Business

A. Description

The purpose of Duke Energy Carolinas, LLC's (the "Company's" or "DEC") EnergyWise Business (the "Program") is an energy efficiency and demand response program for non-residential customers that will allow the Company to reduce the operation of participants AC units to help manage the power grid. The Program provides customers with options on how they would like to participate in the Program. For participation in the program, Company provides participants with an annual incentive applied directly to their bill.

Program participants can choose between a Wi-Fi thermostat or load control switch that will be professionally installed for free by the program for each air conditioning or heat pump unit that they have. In addition to equipment choice, the participants also can choose at what cycling level they would like to participate. There are three levels of cycling, 30%, 50% or 75%. The levels are the percentage reduction of the normal on/off cycle of the unit. During a conservation period, Company will send a signal to the thermostat or switch to reduce the on time of the unit by the percentage selected by the participant. For participating at the 30% level the customer will receive a $50 annual bill credit for each unit, $85 for 50% cycling or $135 for 75% cycling. Finally, participants that have a heat pump unit with electric resistance emergency/back up heat and choose the thermostat can also participate in a winter option that will allow the Company to control the emergency/back up heat. For the 100% control of the emergency/back up heat, Company will provide an additional $25 annual bill credit.

Participants choosing the thermostat will be given access to a portal that will allow them to control their units from anywhere they have internet access. They can set schedules, adjust the temperature set points and receive energy conservation tips and communications from the Company. In addition to the portal access, participants will also receive conservation period notifications. This will allow participants to make adjustments to their schedules or notify their employees of the upcoming conservation period. Finally, the participants will be allowed to override two conservation periods per year. They can do this before the conservation period starts or during the conservation period.

Audience

The Program is available to existing non-residential customers that are not opted-out of the DSM portion of the Company's EE/DSM rider, Rider DSM, have at least one air conditioner or heat pump that operates to maintain a conditioned space on weekdays during the calendar months of May through September, and are not served under Schedules BC and HP, Riders NM, SCG, IS, PS or PSC. Also, customers must have an average minimum usage of 1,000 kWh during those same calendar months.

B & C. Impacts, Participants and Expenses

EnergyWise for Business[1]

$ in millions, rounded[4]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$2.5	$2.5	103%
Program Cost	$1.5	$2.5	168%
MW	9.0	5.5	61%
MWH	1,757.4	2,943.9	168%
Units[3]	3,342	8,537	255%

1) Values are reflected at the system level.

2) Units represent average monthly kW at meter for demand response measures (4,211), plus individual participants for smart thermostat energy efficiency measure (4,326).

3) As filed values not included as program was not included in filing.

4) Numbers rounded.

D. Qualitative Analysis

Highlights

During 2017, the Program has experienced tremendous growth. At the end of the year the Program had enrolled 4,528 accounts and completed installation on 2,632 accounts. The total number of installed devices during 2017 was 4,544. The door to door marketing (canvassing) efforts kick off in 2016 has continued to produce enrollments, installations and positive customer interactions. At this point the Program is canvassing in Charlotte, the greater Charlotte region, Greenville/Spartanburg and Chapel Hill/Durham areas. Through the canvassing efforts we touched over 14,000 customers during 2017.

During the summer control season the Program completed 5 energy conservation events: June 14th, July 13th, July 21st, August 17th and August 22.

Issues

The Program experienced issues with customers canceling appointments when our installer arrives for the installation. These cancellations cause inefficiencies and increased cost. To help with reducing these cancellations we have implemented two program changes. The first is a leave behind used by our canvassers as a reminder of the appointment and installation requirements and the second is a 24 to 48 hour call by our technician as a reminder of the appointment.

Potential Changes

The Program will expand the canvassing markets to include the Winston-Salem/Greensboro market. This market should be live by the end of the first quarter 2018.

E. Marketing Strategy

In 2017 the Program has continued the efforts of door to door marketing using a dedicated canvassing vendor. The canvassing efforts are being used in Charlotte, the greater Charlotte region, Greenville/Spartanburg and Chapel Hill/Durham areas. Through the canvassing efforts we have touched over 14,000 customers during 2017.

In addition to the dedicated canvassers, the Program continues to see enrollments through the cross promotion efforts with the Small Business Energy Savor program and through the Duke Energy Business Energy Advisors.

F. Evaluation, Measurement and Verification

During the July 14, 2017 Collaborative Meeting, the findings from the first evaluation of the program were presented. Due to program start up in 2016, this first impact evaluation was planned as an engineering-based analysis. There were two recommendations by the evaluator, Opinion Dynamics (OD), in the review of the first year of the program: 1) Adopt more conservative HVAC average tonnage values and 2.) increase promotion of higher cycling strategies among program enrollees.

For the EE savings, OD will use IPMVP Option C (utility billing analysis) to estimate EE impacts for calendar year 2017. They will estimate net demand impacts by using linear regression models, comparing demand by customers for event days compared to non-event days. For the process evaluation, OD will conduct program staff interviews, program data and document reviews, early participant interviews, non-participant and drop-out interviews, and conduct a participant online survey. The final report is expected early in the 3rd quarter of 2018.

A. Description

PowerShare® ("Program") is a demand response program offered to commercial and industrial customers. The Program is comprised of Mandatory ("PS-M"), Generator ("PS-G"), Voluntary ("PS-V") and CallOption options, and customers can choose from a variety of offers. Under PS-M, PS-G and CallOption, customers receive capacity credits for their willingness to shed load during times of peak system usage. Energy credits are also available for participation (shedding load) during curtailment events. The notice to curtail under these offers can be rather short (15-30 minutes), although every effort is made to provide as much advance notification as possible. Failure to comply during an event will result in penalties.

Audience

The Program is offered to Duke Energy Carolinas, LLC's (the "Company's") non-residential customers who have not opted-out and are able to meet the load shedding requirements.

B & C. Impacts, Participants and Expenses

PowerShare[1]

$ in millions, rounded[4]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$45.3	$41.5	92%
Program Cost	$16.2	$13.3	82%
MW[2]	371.4	340.4	92%
MWH	0.0	N/A	-
Units[3]	349,625	320,442	92%

Notes on Tables:
1) Values are reflected at the system level.
2) MW capability derived by taking average over specific PowerShare contract periods.
At month-end December 2017, we had the ability to shed 333.5 MW (at the plant), representing 90% of the as filed capacity.
3) Units included in filing represented KW at meter, rather than number of participants. The average participation for 2017 is 168.
4) Numbers rounded.

PowerShare CallOption[1]

$ in millions, rounded[4]	Vintage 2017 As Filed	Vintage 2017 YTD December 31, 2017	% of Target
NPV of Avoided Cost	$0.0	$0.0	-
Program Cost	$0.0	$0.0	-
MW[2]	0.0	0	-
MWH	0.0	N/A	-
Units[3]	0	0	-

Notes on Tables:
1) Values are reflected at the system level.
2) MW capability derived by taking average over specific PowerShare contract periods.
3) Units included in filing represented KW at meter, rather than number of participants. There was no participation in 2017.
4) Numbers rounded.

D. Qualitative Analysis

Highlights

PS-M and PS-G continue to be well received by customers in both North Carolina and South Carolina who have the flexibility to curtail load upon request. Final Environmental Protection Agency ("EPA")

regulations still prevent many customers with standby generators from participating, but the rules should not lead to the loss of any additional existing participants.

Issues

No current issues beyond potential impact of increased number of curtailment events on retaining current and attracting new participants.

Potential Changes

No changes anticipated.

E. Marketing Strategy

To date, marketing efforts for the Program have focused on the relationship between the Company's account executives and their assigned customers. As part of their normal contact with customers, the account executives introduce the Program, including any new options/offers, while explaining the value proposition to the customer. Account executives share in-house analytical spreadsheets that show the specific incentives for each offer as applied to the customer's specific load profile as well as collateral to explain the details of all the Program offers.

F. Evaluation, Measurement and Verification

One of the primary objectives of the 2016 evaluation was to validate the detailed DR baseline approach and calculations, as well as the monthly and seasonal capability calculations performed by Duke Energy. For this, Navigant conducted a detailed audit of the SAS code used by Duke Energy to determine participant baselines and monthly and seasonal capability. In addition, Navigant, the evaluator audited the hourly kW DR event load shed for participating customers by replicating the Schneider Electric Energy Profiler Online (EPO) methods used to calculate the energy (kWh) and demand (kW) impacts that are used to determine settlement payments.

As a result of this, Navigant provided several recommendations for improvement in the SAS code and documentation. During the 2017 evaluation, Navigant is reviewing the modifications to the SAS code and also conducting an audit of the baseline development and the EPO system calculations.

Total Non-Residental Sales		MWhs
	2014 [1]	14,628,243
	2015 [1]	14,829,093
	2016 [2]	14,934,362
	2017 [3]	14,886,464
	2018 [4]	14,765,768
	2019 [4]	14,688,144

Total Non-Residental Customers		Customers
	2014 [1]	87,465
	2015 [1]	88,182
	2016 [2]	89,905
	2017 [3]	90,848
	2018 [4]	91,908
	2019 [4]	92,733

Sales to Opt-Out Customers (MWh)		DSM	EE
	2014	7,827,669	8,511,492
	2015	8,328,819	9,235,324
	2016	9,247,406	10,201,067
	2017	9,247,406	10,327,559
	2018	9,312,025	10,399,711

Sales to Opt-Out Eligible Customers		MWhs
	2015	11,636,851
	2016	11,424,757
	2017	11,817,078

Count of Opt-Out Eligible Customers [5]		Customers
	2015	2,404
	2016	2,374
	2017	3,040

Count of Opted-Out Customers		DSM	EE
	2014	1,152	1,128
	2015	1,304	1,295
	2016	1,306	1,329
	2017	1,694	1,674
	2018	1,690	1,697

Sales to Opt-Out Customers as a Percentage of Sales to Opt-Out Eligible		DSM	EE
	2015	72%	79%
	2016	81%	89%
	2017	78%	87%

Sales to Opted-Out Customers as a Percentage of Total Non-Residential Sales		DSM	EE
	2014	54%	58%
	2015	56%	62%
	2016	62%	68%
	2017	62%	69%
	2018	63%	70%

Count of Opted-Out Customers as a Percentage of Opt-Out Eligible Customers		DSM	EE
	2015	54%	54%
	2017	55%	56%
	2018	56%	55%

Count of Opted-Out Customers as a Percentage of Count of Total Non-Residential Customers		DSM	EE
	2014	1.3%	1.3%
	2015	1.5%	1.5%
	2016	1.5%	1.5%
	2017	1.9%	1.8%
	2018	1.8%	1.8%

1. From Spring 2015 Forecast
2. From Fall 2015 Forecast
3. From Fall 2016 Forecast
4. From Fall 2017 Forecast
5. Eligibility is based solely on being classified as an Industrial customer or a Commercial Customer using 1,000,000 MWh or greater.

Settlement Agreement Analysis of Energy Efficiency Portfolio

Executive Summary

In the Settlement Agreement ("New Portfolio Settlement") approved by the Public Service Commission of South Carolina ("Commission") on December 11, 2013, (Docket No. 2013-298-E), Duke Energy Carolinas, LLC ("DEC" or the "Company") agreed to provide a report estimating the energy efficiency costs, participation, and load impacts associated with fulfilling the aspirational energy efficiency goals established in the Settlement Agreement reached in Docket No. 2011-158-E ("Merger Settlement").

This report presents an update to the report presented in 2017 Rider 9 filing. The proposed Total Portfolio presented below includes actual results from 2014, 2015, 2016 and 2017 along with additional program participation ("Incremental Portfolio") necessary during 2018 to achieve the aspirational savings goals detailed below as specified in Docket No. 2013-298-E.

During 2018, the proposed Total Portfolio has the potential to achieve approximately 1,039 GWH of cumulative EE savings at the overall Duke Energy Carolinas System level with an associated cost of approximately $298.3 Million, which is inclusive of Program and Utility Incentive costs but not Lost Revenues.

Inclusion of the Incremental Portfolio will result in a true-up to Vintage 2018 rates billed in 2020. Current billed rates are 0.4595[1] cents per KWh for Residential customers. Projected rates for residential customers would increase to 0.7277 cents per kWh, or a true up of 0.2681 cents per kWh. Current billed rates are 0.5829 cents per KWh for Non-Residential customers. Projected rates would increase to 1.2812 cents per kWh, or a true-up of 0.6983 cents per kWh, for the Vintage Year 2018 Rider EE Billing Factor for South Carolina Customers.

Introduction

As part of the New Portfolio Settlement, the Company agreed to develop a study designed to assess the feasibility and estimated cost associated with its achievement of EE goals established in the Merger Settlement entered into between the South Carolina Coastal Conservation League, the Southern Alliance for Clean Energy, the Environmental Defense Fund, Duke Energy Corporation, Progress Energy Inc., DEC and Duke Energy Progress, Inc. in Commission Docket Nos. 2011-158-E and 2011-68-E ("Merger Settlement") (i.e., an annual savings target of one percent (1%) of the previous year's retail electricity sales beginning in 2015 and a cumulative savings target of seven percent (7%) of retail electricity sales over the five-year time period of 2014-2018). The study will do the following:

- The study will identify the demand-side management ("DSM") and EE programs that are both technically and economically feasible and are projected to be necessary to demonstrate a good faith effort by the Company to achieve the EE goals.
- The study will also estimate the participation and expected energy and/or capacity savings for each program, as well as projected annual program costs.
- A draft of the study will be provided to the DEC EE Collaborative for review and comment no later than December 31, 2014.

[1] This 0.4595 cents/KWh is only for the 2018 Vintage portion of the EE rider and is included for comparison to the value presented in last year's analysis which was derived using the same methodology. The overall Residential Rate effective January 1, 2018 is 0.6671 cents per KWh, includes this Vintage 2018 portion plus true-ups and projections from other years covered by Rider 9.

- The study will be filed for informational purposes in the first DSM/EE rider proceeding to occur after the study is completed and will be updated annually in each DSM/EE rider proceeding during the 2015-2019 period.

Please note that DEC is only providing analysis of the EE portion of this agreement because the original settlement agreement referred only to KWh achievements and DEC does not claim any KWh achievements resulting from DSM programs.

Target Savings

In order to calculate the energy savings targeted in the Merger Settlement's aspirational efficiency goals, DEC started with the actual overall DEC System Retail Sales through 2017. The results of this analysis are shown in Table 1 below. Please note that these sales volumes have been increased by the line losses in order to correctly compare the "at the plant" EE savings with the prior year retail sales.

Table 1
DEC System Retail Sales and EE Savings Forecast

Year	Base Porfolio Impacts, MWh	Cumulative Base Portfolio Impacts, MWh	Prior Year Actual Retail Sales at Plant	Base Portfolio as % of Prior Year Retail Sales	Incremental Portfolio Impacts, MWh	Total Portfolio Impacts, MWh	Cumulative Total Portfolio Impacts, MWh	Prior Year Actual Retail Sales at Plant	Total Portfolio as % Prior Year Retail Sales	Total Cumulative Impacts since 2009, MWh	Cumulative since 2009 as % of Prior Year Retail Sales
2013										2,224,404	
2014	463,648	463,648	80,198,922	0.58%		463,648	463,648	80,198,922	0.58%	2,688,052	3.35%
2015	560,036	1,023,684	83,090,540	0.67%		560,036	1,023,684	83,090,540	0.67%	3,248,088	3.91%
2016	654,931	1,678,614	83,746,166	0.78%		654,931	1,678,614	83,746,166	0.78%	3,903,019	4.66%
2017	782,384	2,460,999	83,954,411	0.93%		782,384	2,460,999	83,954,411	0.93%	4,685,403	5.58%
2018	549,034	3,010,032	81,802,108	0.67%	490,000	1,039,034	3,500,032	81,802,108	1.27%	5,724,437	7.00%

Note: For the purpose of this analysis, given the difficulty in estimating Opt Outs, this table represents Total Retail Sales rather than reflecting only sales from customers eligible to participate in the Company's EE programs.

As you can see from the "Base Portfolio as % of Prior Year Retail Sales" column above, the approved portfolio, adjusted for 2014, 2015, 2016 and 2017 actual results and 2018 estimated results, achieves an average savings of approximately 0.73% of the prior year retail sales during the period 2014-18.

Also, please note that both conditions set forth in the Merger Settlement have been met in this analysis. With the inclusion of the Incremental Portfolio, achievements during 2018 exceed 1% and the cumulative achievements at the end of 2018 meet the 7% target.

Base Portfolio

In order to create a plan to achieve the aspirational savings set forth in Docket No. 2013-298-E, DEC started with a five-year portfolio based on the portfolio approved in Docket No. 2013-298-E ("Base Portfolio"). The actual total DEC System KWh impacts, Participants, Program Costs, Utility Incentives and Revenue Requirement for each year from 2014-18 are included in Table 2 below. This Base Portfolio has been adjusted to include actual performance for 2014, 2015, 2016 and 2017.

Table 2
Base Portfolio - 2014-18

	2014			2015			2016			2017			2018		
Program Name	KWh	Participants	Program $	KWh	Participants	Program $	KWh	Participants	Program $	KWh	Participants	Program $	KWh	Participants	Program $
Residential Programs															
Appliance Recycling Program	9,695,099	9,753	$ 1,512,066	10,548,144	9,797	$ 1,533,087	317,618	263	$ (97,391)	-	-	$ 5,297	-	-	$ -
Energy Efficiency Education	6,991,608	27,891	$ 1,956,496	4,417,898	19,582	$ 2,049,791	6,441,283	30,170	$ 2,121,607	5,932,086	27,785	$ 2,072,267	5,604,364	26,250	$ 2,103,036
Energy Efficient Appliances and Devices	187,992,480	5,069,137	$ 14,701,023	148,582,385	3,826,679	$ 12,024,262	150,463,925	3,868,812	$ 24,013,998	217,919,505	6,819,189	$ 30,275,929	124,192,204	3,533,486	$ 23,729,947
HVAC Energy Efficiency	6,501,563	12,866	$ 4,774,663	6,810,489	13,489	$ 5,404,412	8,452,025	19,475	$ 7,821,844	11,057,156	27,311	$ 7,387,527	6,366,367	9,480	$ 4,379,521
Income Qualified Energy Efficiency and Weatherization Assistance	3,447,204	9,082	$ 1,909,870	2,914,063	6,836	$ 2,232,000	4,260,402	9,339	$ 4,780,115	4,951,901	11,726	$ 5,493,401	5,287,477	10,426	$ 7,483,328
Multi-Family Energy Efficiency	10,706,959	162,241	$ 1,438,728	14,970,512	232,495	$ 2,088,423	15,909,865	269,671	$ 2,512,199	19,445,278	356,003	$ 3,161,750	23,223,721	370,882	$ 4,161,326
My Home Energy Report (1)	2,756,088	26,234	$ 8,264,278	82,764,739	419,807	$ 9,824,522	54,793,497	34,554	$ 10,799,506	27,798,930	192,029	$ 13,786,373	(6,981,901)	(40,555)	$ 12,472,487
Energy Assessments	10,599,335	10,753	$ 3,595,650	10,293,765	10,443	$ 3,079,275	7,389,091	28,853	$ 2,672,325	8,131,752	52,546	$ 2,902,310	7,435,992	59,080	$ 2,613,893
Non Residential Programs															
Business Energy Report	-	-	$ -	-	-	$ 124,636	5,561,349	14,947	$ 262,432	-	-	$ 126,219	-	-	$ -
Energy Wise for Business	-	-	$ -	18,374	27	$ 1,544,003	718,623	1,056	$ 464,302	2,943,906	4,326	$ 2,475,377	3,530,072	2,292	$ 2,170,686
Non Residential Smart Saver Custom Technical Assessments	9,806,357	75	$ 1,449,212	765,303	2,501	$ 655,585	19,486,669	199	$ 2,026,728	17,969,235	6	$ 2,135,919	23,358,869	13,248	$ 2,141,618
Non Residential Smart Saver Custom	92,873,754	32,451	$ 8,100,681	83,995,665	21,318	$ 9,879,256	59,947,844	34,098	$ 7,328,748	47,614,448	40,134	$ 7,280,168	109,558,171	62,136	$ 12,072,548
Non Residential Smart Saver Energy Efficient Food Service Products	3,344,251	2,325	$ 198,756	2,521,118	2,304	$ 191,797	5,962,012	3,574	$ 323,048	3,667,682	2,730	$ 305,687	1,227,966	453	$ 156,944
Non Residential Smart Saver Energy Efficient HVAC Products	6,671,035	925,410	$ 812,536	7,721,743	3,014,985	$ 1,137,153	4,738,429	4,198,078	$ 1,469,808	4,832,440	3,016,407	$ 1,557,542	6,207,966	5,124,564	$ 1,822,719
Non Residential Smart Saver Energy Efficient Lighting Products	87,643,857	295,023	$ 6,706,253	86,886,057	305,298	$ 11,289,537	214,656,707	952,324	$ 39,533,875	312,839,531	2,290,141	$ 66,551,086	126,795,589	14,535,813	$ 18,461,820
Non Residential Energy Efficient Pumps and Drives Products	9,267,238	5,258	$ 582,689	6,026,543	3,805	$ 464,115	6,235,851	3,361	$ 470,813	8,676,744	4,361	$ 527,539	5,160,510	2,750	$ 388,316
Non Residential Energy Efficient ITEE	177,482	1,364	$ 25,666	7,423,871	957	$ 714,361	3,517,181	759	$ 284,529	4,757	45	$ 60,885	5,461,646	15,935	$ 379,927
Non Residential Energy Efficient Process Equipment Products	945,548	1,450	$ 89,586	1,078,956	1,764	$ 88,343	782,826	1,351	$ 125,674	1,167,642	8,936	$ 161,937	500,469	1,657	$ 67,742
Non Residential Smart Saver Performance Incentive	-	-	$ -	-	-	$ -	-	-	$ 34,795	14,557	19	$ 313,256	6,558,641	6,174,765	$ 998,804
Small Business Energy Saver	4,759,466	4,023,251	$ 1,023,823	75,257,886	63,541,107	$ 13,922,049	83,192,163	70,239,423	$ 15,328,796	94,676,408	79,986,749	$ 17,318,666	89,553,768	75,800,000	$ 17,602,867
Smart Energy in Offices	9,468,233	24,883,395	$ 1,152,092	7,038,455	41,795,528	$ 1,456,572	2,103,553	46,628,788	$ 1,059,414	(7,259,793)	26,824,711	$ 884,119	5,991,950	3,955,200	$ 1,244,723
Totals	**463,647,552**	**35,497,959**	**$ 58,294,067**	**560,035,966**	**113,228,722**	**$ 79,703,179**	**654,930,913**	**126,339,095**	**$ 123,337,165**	**782,384,162**	**119,665,154**	**$ 164,783,255**	**549,033,841**	**109,657,861**	**$ 114,452,253**
Total Utility Incentive															**$ 31,836,346**
Total Revenue Requirement															**$ 146,288,598**

Note: Negative KWh and Participants caused by treatment of programs with one-year measure life as incremental annual instead of year-end capability.

Please note that "Participants" as included in the Tables in this report can be defined as the number of customers, pieces of energy efficient equipment or KWh of savings, depending on the program being described. Also, Revenue Requirements do not include Lost Revenue recovery as allowed under the current New Portfolio Settlement.

Two other minor adjustments were made to the 2018 portion of the Base portfolio versus what was included in this report provided in the 2017 Rider 9 filing. The Business Energy Reports program was terminated during 2017 and the projected impacts that had been included in 2018 in the prior report were removed from the 2018 projection in this year's analysis.

In addition, an Evaluation, Measurement and Verification (EM&V) study was completed on the Smart Energy in Offices ("SEiO") program and this study found that the actual measured and verified savings were significantly lower (approximately 65.6% lower) than those originally projected for this program. Due to the significantly lower impacts, SEiO is scheduled for termination June 30, 2018. This adjustment was applied to the actual impacts for this program in prior years and the updated impacts and related termination of the program were applied to the projected impacts for this program in 2018 in this analysis.

Incremental Portfolio

In order to achieve the remaining impacts, the Base Portfolio must be augmented with additional participants through increased program expenditures to achieve additional KWh savings.

In addition, all Programs in the Incremental Portfolio, with the exception of Commission approved programs that provide societal benefit, must be cost effective in order to be included. To the extent that increased program costs are required to reach additional participation and those cost increases cause a program to no longer be cost effective, the Company would determine at that time whether or not to continue to offer that program.

Incremental Program Costs

In assessing the cost to implement the Incremental Portfolio, one issue that needs to be addressed is whether the program implementation costs are affected by the level of market penetration. In other words, as more of the market potential is achieved through the implementation of the EE programs, one would expect that the cost to achieve the next increment would increase. Information in the EE literature defining the relationship between program costs and market penetration is lacking.

As part of the preparation of this original analysis for the Rider 7 Filing, the Company obtained a research study[2] authored by Dr. Richard Stevie that relies on state level data from the Energy Information Administration. The study examined the relationship between spending on energy efficiency programs and the level of first year impacts from the implementation of energy efficiency programs as well as the cumulative level of impacts. The study concluded that energy efficiency program costs per kWh increase with increases in cumulative achievement of market potential as measured by the percent of retail kWh sales. Based upon this study, the projected range of increase in the unit program costs is estimated to be 24% to 88%. Although this is a wide range, it is a preliminary indication of how costs are expected to increase as program efforts move beyond the achievable potential toward the economic potential. For this report, the Company is using a 50% increase in the unit costs to estimate the Program Costs for the Incremental Portfolio.

In addition to the cost increases required to increase participation in existing programs, certain significant components of the current Base Portfolio, the My Home Energy Report, the Business Energy Report and the Smart Energy in Offices programs, were designed to reach the entire available market during the five-year Base Portfolio and incremental participation and impacts are not projected to be available from these programs.

Table 3 shows the estimated KWh Impacts, Participation, Program Costs, Utility Incentives and Revenue Requirement required of the Incremental Portfolio in order to reach the savings set forth in Docket No. 2013-298-E.

Table 3
Incremental Portfolio - 2014-18

	2014			2015			2016			2017			2018		
Program Name	KWh	Participants	Program $	KWh	Participants	Program $	KWh	Participants	Program $	KWh	Participants	Program $	KWh	Participants	Program $
Residential Programs															
Appliance Recycling Program													-	-	$ -
Energy Efficiency Education													4,992,763	23,385	$ 2,810,299
Energy Efficient Appliances and Devices													110,639,177	3,147,879	$ 31,710,467
HVAC Energy Efficiency													5,671,609	-	$ -
Income Qualified Energy Efficiency and Weatherization Assistance													4,710,458	9,288	$ 10,000,015
Multi-Family Energy Efficiency													20,689,329	330,408	$ 5,560,804
My Home Energy Report (1)													-	-	$ -
Energy Assessments													6,624,506	52,633	$ 3,492,960
Non Residential Programs															
Business Energy Report													-	-	$ -
Energy Wise for Business													3,144,837	2,042	$ 2,900,700
Non Residential Smart Saver Custom Technical Assessments													20,809,728	11,802	$ 2,861,857
Non Residential Smart Saver Custom													97,602,149	55,355	$ 16,132,617
Non Residential Smart Saver Energy Efficient Food Service Products													1,093,959	403	$ 209,725
Non Residential Smart Saver Energy Efficient HVAC Products													5,530,494	4,565,323	$ 2,435,710
Non Residential Smart Saver Energy Efficient Lighting Products													112,958,457	12,949,528	$ 24,670,638
Non Residential Energy Efficient Pumps and Drives Products													4,597,347	2,449	$ 518,910
Non Residential Energy Efficient ITEE													4,865,620	14,196	$ 507,698
Non Residential Energy Efficient Process Equipment Products													445,853	1,476	$ 90,524
Non Residential Smart Saver Performance Incentive													5,842,900	5,500,916	$ 1,334,708
Small Business Energy Saver													79,780,815	67,527,988	$ 23,522,814
Smart Energy in Offices													-	-	$ -
Totals													490,000,000	94,195,072	$ 128,760,445
Total Utility Incentive															$ 22,768,065
Total Bonus Utility Incentive															$ 500,000
Total Revenue Requirement															$ 152,028,511

Note: 2014-17 information does not apply to the Incremental Portfolio

[2] The research study was included with the original report in the Company's 2015 filing as Rider 7, Exhibit 10

As shown in Table 4 below, in order to achieve the aspirational total DEC System EE impacts set forth in Docket No. 2013-298-E, the following Total Portfolio will be required:

Table 4
Total Portfolio - 2014-18

	2014			2015			2016			2017			2018		
Program Name	KWh	Participants	Program $	KWh	Participants	Program $	KWh	Participants	Program $	KWh	Participants	Program $	KWh	Participants	Program $
Residential Programs															
Appliance Recycling Program	9,695,099	9,753	$ 1,512,066	10,548,144	9,797	$ 1,533,087	317,618	263	$ (97,391)	-	-	$ 5,297	-	-	$ -
Energy Efficiency Education	6,991,608	27,891	$ 1,956,496	4,417,898	19,582	$ 2,049,791	6,441,283	30,170	$ 2,121,607	5,932,086	27,785	$ 2,072,267	10,597,127	49,635	$ 4,913,334
Energy Efficient Appliances and Devices	187,992,480	5,069,137	$ 14,701,023	148,582,385	3,826,679	$ 12,024,262	150,463,925	3,868,812	$ 24,013,998	217,919,505	6,819,189	$ 30,275,929	234,831,381	6,681,365	$ 55,440,414
HVAC Energy Efficiency	6,501,563	12,866	$ 4,774,663	6,810,489	13,489	$ 5,404,412	8,452,025	19,475	$ 7,821,844	11,057,156	27,311	$ 7,387,527	12,037,975	9,480	$ 4,379,521
Income Qualified Energy Efficiency and Weatherization Assistance	3,447,204	9,082	$ 1,909,870	2,914,063	6,836	$ 2,232,000	4,260,402	9,339	$ 4,780,115	4,951,901	11,726	$ 5,493,401	9,997,935	19,714	$ 17,483,344
Multi-Family Energy Efficiency	10,706,959	162,241	$ 1,438,728	14,970,512	232,495	$ 2,088,423	15,909,865	269,671	$ 2,512,199	19,445,278	356,003	$ 3,161,750	43,913,049	701,291	$ 9,722,129
My Home Energy Report (1)	2,756,088	26,234	$ 8,264,278	82,764,739	419,807	$ 9,824,522	54,793,497	34,554	$ 10,799,506	27,798,930	192,029	$ 13,786,373	(6,981,901)	(40,555)	$ 12,472,487
Energy Assessments	10,599,335	10,753	$ 3,595,650	10,293,765	10,443	$ 3,079,275	7,389,091	28,853	$ 2,672,325	8,131,752	52,546	$ 2,902,310	14,060,498	111,713	$ 6,106,853
Non Residential Programs															
Business Energy Report	-	-	$ -	-	-	$ 124,636	5,561,349	14,947	$ 262,432	-	-	$ 126,219	-	-	$ -
Energy Wise for Business	-	-	$ -	18,374	27	$ 1,544,003	718,623	1,056	$ 464,302	2,943,906	4,326	$ 2,475,377	6,674,910	4,334	$ 5,071,386
Non Residential Smart Saver Custom Technical Assessments	9,806,357	75	$ 1,449,212	765,303	2,501	$ 655,585	19,486,669	199	$ 2,026,728	17,969,235	6	$ 2,135,919	44,168,597	25,050	$ 5,003,475
Non Residential Smart Saver Custom	92,873,754	32,451	$ 8,100,681	83,995,665	21,318	$ 9,879,256	59,947,844	34,098	$ 7,328,748	47,614,448	40,134	$ 7,280,168	207,160,320	117,491	$ 28,205,165
Non Residential Smart Saver Energy Efficient Food Service Products	3,344,251	2,325	$ 198,756	2,521,118	2,304	$ 191,797	5,962,012	3,574	$ 323,048	3,667,682	2,730	$ 305,687	2,321,925	856	$ 366,669
Non Residential Smart Saver Energy Efficient HVAC Products	6,671,035	925,410	$ 812,536	7,721,743	3,014,985	$ 1,137,153	4,738,429	4,198,078	$ 1,469,808	4,832,440	3,016,407	$ 1,557,542	11,738,460	9,689,887	$ 4,258,429
Non Residential Smart Saver Energy Efficient Lighting Products	87,643,857	295,023	$ 6,706,253	86,886,057	305,298	$ 11,289,537	214,656,707	952,324	$ 39,533,875	312,839,531	2,290,141	$ 66,551,086	239,754,046	27,485,341	$ 43,132,458
Non Residential Energy Efficient Pumps and Drives Products	9,267,238	5,258	$ 582,689	6,026,543	3,805	$ 464,115	6,235,851	3,361	$ 470,813	8,676,744	4,361	$ 527,539	9,757,857	5,199	$ 907,226
Non Residential Energy Efficient ITEE	177,482	1,364	$ 25,666	7,423,871	957	$ 714,361	3,517,181	759	$ 284,529	4,757	45	$ 60,885	10,327,266	30,130	$ 887,625
Non Residential Energy Efficient Process Equipment Products	945,548	1,450	$ 89,586	1,078,956	1,764	$ 88,343	782,826	1,351	$ 125,674	1,167,642	8,936	$ 161,937	946,322	3,134	$ 158,266
Non Residential Smart Saver Performance Incentive	-	-	$ -	-	-	$ -	-	-	$ 34,795	14,557	19	$ 313,256	12,401,540	11,675,681	$ 2,333,512
Small Business Energy Saver	4,759,466	4,023,251	$ 1,023,823	75,257,886	63,541,107	$ 13,922,049	83,192,163	70,239,423	$ 15,328,796	94,676,408	79,986,749	$ 17,318,666	169,334,583	143,327,988	$ 41,125,682
Smart Energy in Offices	9,468,233	24,883,395	$ 1,152,092	7,038,455	41,795,528	$ 1,456,572	2,103,553	46,628,788	$ 1,059,414	(7,259,793)	26,824,711	$ 884,119	5,991,950	3,955,200	$ 1,244,723
Totals	**463,647,552**	**35,497,959**	**$ 58,294,067**	**560,035,966**	**113,228,722**	**$ 79,703,179**	**654,930,913**	**126,339,095**	**$ 123,337,165**	**782,384,162**	**119,665,154**	**$ 164,783,255**	**1,039,033,841**	**203,852,933**	**$ 243,212,698**
Total Utility Incentive															**$ 54,604,411**
Total Bonus Utility Incentive															**$ 500,000**
Total Revenue Requirement															**$ 298,317,109**

Summary of Results

As shown in the tables above, the Incremental Portfolio is projected to result in an increase in overall DEC System Revenue Requirement of approximately $152 MM (Program Costs plus Utility Incentives, not including Lost Revenues) during 2018, as compared to approximately $146 MM projected by the Company for the Base Portfolio Program Costs during 2018.

In addition, inclusion of the Incremental Portfolio will result in an increase from 0.4595 cents per KWh for Residential customers and 0.5829 cents per KWh for Non-Residential customers to an estimated rate of .7277 cents per KWh and 1.2812 cents per KWh, respectively, for the Vintage Year 2018 Rider EE Billing Factors for South Carolina Customers.